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ABSTRACT

This product of the Leadership Training Institute/Vocational and Special Education contains a series of policy papers intended to identify and address several issues that relate to providing postsecondary vocational education services to handicapped learners. Six papers address these topics and issues: (1) Legislative Issues Affecting Post-Secondary Vocational Education for Handicapped Learners: (2) State Planning of Post-Secondary Vocational Education for Handicapped Learners: (3) Needs Assessment in Post-Secondary Vocational Education for Handicapped Learners: (4) Articulation in Post-Secondary Vocational Education for Handicapped Learners: (5) Support Services in Post-Secondary Vocational Education for Handicapped Learners: and (6) Learning Capacities in Post-Secondary Educational Programs for Handicapped Learners. Each paper suggests major issues for further consideration and/or recommendations. An epilogue summarizes the papers' contents. (YLB)

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Post-Secondary Vocational Education for the Handicapped

Policy Paper Series: Document 3

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FOREWORD

The mid and late 1970's were characterized by the enactment of new, major legislative mandates in the education and employment of handicapped individuals. Public Law 94-142 and Sections 503 and 504 of the Rehabilitation Act of 1973 have had profound effects upon educators and employers. In response to these mandates, a number of diverse programming approaches and policies have been implemented by vocational and special educators, and vocational rehabilitation personnel at the state and local levels.

The Leadership Training Institute (LTI)/Vocational and Special Education was established to assist state leadership personnel in improving and expanding vocational education opportunities for handicapped learners. The project is supported by a grant from the Division of Personnel Preparation, Office of Special Education, U.S. Education Department. Through the project, emerging legislative issues and priorities pertaining to vocational education for handicapped learners are addressed in regional leadership training institutes. By March, 1981, eight institutes will have been conducted throughout the nation addressing a variety of key issues.

This series of policy papers on Post-Secondary Vocational Education for Handicapped Learners is a product of the third Leadership Training Institute which was held in Tuscon, Arizona, on January 27-29, 1980. A comprehensive literature review and a small scale needs assessment survey identified a number of major concerns in this area such as legislative issues, state planning, needs assessment, articulation, support services, and learning capacities.

Several recognized leaders in the field of post-secondary vocational education for the handicapped were invited to prepare papers addressing each of the major concerns that had been identified. It is a pleasure to share these insightful and cogent policy papers through the production of this volume. The LTI is greatly indebted to the authors for their excellent contributions: Dr. Ronald H. Denison, The National Center for Research in Vocational Education, The Ohio State University; Dr. William E. Castle, Dr. Jack R. Clarcq, and Dr. Richard L. Cattanach, National Technical Institute for the Deaf, Rochester Institute of Technology; Dr. Nancy K. Hartley, University of Northern Colorado; Donna Wright, Aims Community College; Dr. Steven R. Fasteau, El Camino College; and Dr. Herbert Rusalem, Professor Emeritus, Teachers College, Columbia University.

Dr. James P. Greenan, Research and Development Coordinator for the LTI, has done an outstanding job in planning and editing this policy paper series. His tireless efforts were much appreciated. Dr. Janet Treichel, Training and Dissemination Coordinator, was instrumental in the production and dissemination of each of the policy paper series. A special note of appreciation is extended to Ms. Shirley Burton and Ms. Margaret Hensel for their assistance in typing and proofing the manuscript.

L. Allen Phelps, Director
Leadership Training Institute/
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PREFACE

Post-secondary vocational education for handicapped learners is becoming an area of increased interest to vocational and special educators. Recent federal and state legislation and initiatives have encouraged both the private and public sectors to better respond to the needs of handicapped learners in post-secondary education.

However, the area of post-secondary vocational education for handicapped learners has not been adequately addressed, despite the fact that many handicapped people continue to be unemployed. Post-secondary vocational education can provide occupational training, coordinated programs, employability, and retraining and/or updating of skills. Continuing education for adults and youth unemployment are areas of increasing concern to vocational educators. However, handicapped people who have received no vocational training and possess no job-entry skills have not been served effectively. Many handicapped people have received no career awareness, career orientation, or career exploration, including vocational training and cooperative work experience during their elementary or secondary education. Several handicapped learners were placed in self-contained special education classes and did not receive training to learn skills for obtaining and securing employment. Post-secondary vocational education can serve handicapped people and give them opportunities to become active members in society.

The Post-Secondary Vocational Education for Handicapped Learners Policy Paper Series is intended to identify and address several of the issues that relate to providing post-secondary vocational education services to handicapped learners. The topics and issues that are addressed include:

- Legislative Issues Affecting Post-Secondary Vocational Education for Handicapped Learners.
- State Planning of Post-Secondary Vocational Education for Handicapped Learners.
- Needs Assessment in Post-Secondary Vocational Education for Handicapped Learners.
- Articulation in Post-Secondary Vocational Education for Handicapped Learners.
- Support Services in Post-Secondary Vocational Education for Handicapped Learners.
- Learning Capacities in Post-Secondary Educational Programs for Handicapped Learners.

These titles do not reflect an all inclusive list of topics relating to post-secondary vocational education for handicapped learners. However, they do provide a basis for examining some of the significant issues and concerns that presently exist.

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Legislative Issues Affecting Post-Secondary Vocational Education for Handicapped Learners

by

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INTRODUCTION

Society is becoming more aware about the capabilities of handicapped individuals. Perhaps we should refer to the handicapped as the "handicapables." This positive identifier is indeed appropriate. When given the opportunities for education and employment, they can clearly demonstrate their intelligence and skills in both areas. Increased opportunities have occurred because of the efforts of so many and the initiation of several federal initiatives.

There are very few people who cannot be trained to do something. The mind and the body are very flexible and adaptable even under considerable handicaps. Caring people and innovative programs can and do assist handicapped people. One such exemplary program ran for a number of years in the mid 1970s at Manchester Community College in Connecticut. Project HELP (Handicapped Earning and Learning Project) took people out of state institutions for the retarded and brought them to the campus each day to assist them in becoming productive and independent citizens. There were two parts of the program: (1) Personal care--which taught the students (ages 17 to 40) to take

care of themselves, travel and live alone outside of an institution; and (2) Development of saleable skills and job placement--which provided training in food services and housekeeping services. These students became a part of the campus. They went from almost total dependence to independence, from tax burdens to taxpayers, and from passive to active participants in everyday life. They succeeded in their training, obtained jobs, earned salaries, lived in their own apartments, and became a part of the "normal" world. As a result of this and other experiences, and through the assistance of people and agencies, the great majority of our handicapped citizens can become happier and more productive people in an almost unlimited number of occupations.

What do we know about the laws and organizations which relate to post-secondary occupational education for the handicapped? Do you feel that the following statements are true?

1. There is enough money to do the job.
2. There is enough staff to do the job.
3. There is complete cooperation and agreement among the many agencies and people relating to the handicapped.

These are the main issues. Most people would probably say that these are not true statements. Nonetheless, a better understanding of the legislation and an examination of the attitudes of people will assist us in better using the resources we have. It is true that all of the concerns impacting on this problem cannot be resolved. However, collective efforts can increase and improve the opportunities for handicapped individuals who seek post-secondary vocational programs in their pursuit of personal fulfillment and employment.

The principle that education is the right of all individuals is based on one of our philosophical premises of democracy. This premise implies that every person is important in his or her own right and should be given an equal opportunity to develop to his or her maximum potential. It is unfortunate that far too often this concept has not been applied to all people, particularly those who require specialized educational services to achieve their potential. The handicapped are one such group. They are individiuals who because of physical, mental, emotional, or learning problems require specialized services.

This group of people for the most part has been excluded from educational and employment opportunities for almost the first two centuries of this country's existence. What help existed for them was primarily custodial. As late as December 19, 1979, a HEW Task Force on Public Awareness and the Disabled stated,

> Solely because of their disability, handicapped people have been consistently denied opportunities in education, employment, health care, social services and nearly all other aspects of daily life. Consciously or not, able-bodied people tend to see an individual's disability rather than look beyond it at a person's ability, training, and experience.

Significant changes in the attitudes of the public toward education of the handicapped have occurred over the last three decades. Several factors contributed to these changes after World War II. Dr. Hal Starr of The National Center for Research in Vocational Education calls it "a conspiracy of forces." First, there was the baby boom. Impacting on this were the improvements in medicine which led to decreased infant mortality. With better health care and more babies surviving, a higher incidence of handicapped occurred. Another contributing factor was

the increasing standard of living which resulted in the move to suburbia. The more affluent and articulate parents began seeking ways to educate their handicapped children. Remotely located institutions did not seem a satisfactory answer to the growing need. Combining all these factors with the Civil Rights movement, change was inevitable.

LEGISLATIVE INITIATIVES

The waves of change are upon us now. Opportunities for occupational education and employment for the handicapped have never been better than they are today. The growth of the civil rights and handicapped consumer movements have contributed to several legislative initiatives enacted by Congress in recent years. These new laws clearly state the increased national commitment to improve and expand educational and employment opportunities for all people, including the handicapped. When opportunities to maximize the potentials of any group of people are increased, those people and the nation's needs are better served. Our combined efforts with and for handicapped children and adults must bring such results.

Congress has enacted five major laws which affect occupational education for handicapped individuals and include:

1. The Vocational Education Act of 1963 (P.L. 88-210) as amended in 1976 (P.L. 94-482)
2. The Adult Education Act of 1970 (P.L. 91-230) as amended in 1978 (P.L. 95-561)
3. The Vocational Rehabilitation Act of 1973 (Section 504) (P.L. 93-112)
4. The Comprehensive Employment and Training Act of 1973 (P.L. 93-203), as amended in 1977 and 1978 (P.L. 95-440 & 95-524)

5. The Education for All Handicapped Children Act of 1975 (P.L. 94-142)

Several publications from various sources over the past two or three years have presented the salient points of these acts and amendments. Some of the major pieces of legislation and their provisions include:

1. The Vocational Education Act of 1963

   a. Money is available to expand, improve, and maintain vocational programs.

   b. Ten percent (10%) of the money must be spent on handicapped students.

   c. State plans must be consistent with the provisions of P.L. 94-142.

   d. Vocational and special educators share the responsibility for the development of programs for handicapped students.

   e. The focus now is on the individual's needs rather than the needs of business and industry.

2. The Adult Education Act of 1970

   a. The delivery system is expanded and the outreach broadened.

   b. The emphasis is on providing basic adult education for those who are least educated and most in need.

   c. Coordination and cooperation is expected between educational agencies (public and private) and state and federal offices.

   d. Increased programs for more diverse groups and needs and greater flexibility in schedules, locations, and transportation are expected.

3. The Vocational Rehabilitation Act of 1973

   a. This is the first major federal law protecting the civil rights of the handicapped.

b. Educational institutions which receive HEW assistance are to provide eligible handicapped people with free education and equivalent programs, including counseling and placement services.

c. Employers with government contracts of more than $2500 must affirmatively recruit, hire, train, and promote the handicapped.

4. The Comprehensive Employment and Training Act of 1973

a. The Act authorizes a range of programs to assist the unemployed to develop job skills and work potential, including the disabled.

b. CETA prime sponsors are required to include in their plans, descriptions of training and employment services for the handicapped.

c. Discrimination on the basis of handicap is prohibited.

d. Planning and training councils are required to include in their membership representatives of the handicapped.

e. Part-time, flex-time and other alternate working arrangements are permited for individuals unable, because of handicap, age, or other factors, to work full-time.

5. The Education for All Handicapped Children Act of 1975

a. The law is a broad based mandate for a free appropriate public education for all handicapped persons aged 3 to 21 years.

b. Handicapped children and youth are guaranteed the availability of special education programming.

c. Individualized programs are required for each handicapped student, with access to special education and related services.

d. Federal funds will be available to state and local units to assist them in their efforts on behalf of the handicapped.

e. The right to vocational education for all handicapped students is established in this law.

Several questions have arisen as a result of this legislation. The first may be what are the major interfaces of the acts which affect post-secondary vocational education for the handicapped? The most obvious interface is the overlapping of common factors or expectations in the laws. Sensitivity to human needs and participatory democracy seem more apparent in the legislation. Definitions about groups of people, councils, funding expectations, and others are similar in many of these laws. Handicapped people are one group which is frequently referred to in these laws. An interface exists regarding advisory councils, making planning input, and having representatives from various agencies including people being served. Another interface is training and job placement. Funds are available for training people and for extra support services for the disabled. Exemplary programs, modeling, and renovation are repeated in legislation. The strong emphasis on interagency cooperation and accessibility is also a redundant interface. There is a commonality throughout the legislation for meeting the individual needs of all our citizens.

CRITICAL QUESTIONS

How should state agencies extend beyond federal laws to improve post-secondary vocational education for the handicapped? Surface compliance and "filling the squares" do not take us very far in meeting the needs of people. There is still much turf protection between the various state agencies. Despite the current efforts to get agencies to work together, this is still a major problem. There is a need for meaningful coordination. Somebody or some group must take the responsibility. It must be explicit as to what each agency is to deliver.

Perhaps the Rehabilitation Department should take the lead most often because they may be most familiar with the individual's needs. There needs to be redesigning in training, support services, job placement and jobs in most of the agencies. Vocational Education leaders must be willing to restructure their operation to prepare the handicapped learners for a specific "job," not a "career." Specific skills for a specific and available job (perhaps a restructured job) are necessary. This means that all agencies must give more attention to the kinds of handicapped people.

What are the specific needs of a given person, his strengths and limitations? This necessitates a deeper assessment of each handicapped person and requires greater coordination and cooperation between all of the agencies involved. In many cases it focuses on individualized instruction.

What do state laws declare about post-secondary vocational education for the handicapped? For the most part, state laws are silent on this question. The states are relying on federal laws and regulations, and interpretations thereof, to show the way rather than taking the initiative to establish new and more specific approaches.

What major changes are required to facilitate implementation of effective post-secondary vocational programs for the handicapped? In this question it is easier to point out weaknesses in the present system than it is to make specific recommendations for change. The flow of federal monies directly to post-secondary institutions has been limited and difficult for years. The new laws and regulations do not improve on this situation. The set-asides have not been effective. There is

more paperwork than real work. Lack of interagency coordination exacerbates the problems. The funding process must be restructured. The post-secondary vocational education people, both local and state, need to understand the total ramifications of a given person's handicap. This should not be done by lecturing, but by working on individual cases, following them through the process. In this way an understanding can be gained of what the handicapped person can do and how the trainer and trainee must work out a specific program to accomplish specific goals. When there is an understanding on the part of the student, educator, and employer that all must restructure their approaches, then progress can be made.

What federal initiatives are being pursued, could or should be pursued, to assist states in implementing effective post-secondary vocational education programs for the handicapped? Not much progress is being made in regard to the federal programs in research and development and in sharing exemplary projects. More appropriate research and development activities are needed. The federal government could fund regional consortia in the states to do planning, determining the problems facing the various agencies, and seeking solutions to those problems.

The final question is who should be responsible for delivering post-secondary vocational educational services to the handicapped? An easy answer is that all people, institutions, and agencies who have contact with handicapped individuals should be responsible for assuring that the job gets done. The basic problem is cooperation and coordination. Probably a single agency cannot be responsible all of the time.

If one agency arbitrarily assumes the role there will be little cooperation. The circumstances of the "client(s)" should be a factor. If the special and vocational education personnel would jointly work out an agreeable structure, the task could be done more efficiently and effectively. If all groups would agree that the Rehabilitation Department would chair or direct the activity with active support from the other groups, it would have the best chance of success. Shared planning and teamwork would improve the outcome.

CONCLUSION

There is much work to be done, changes to be made, problems to be resolved, and successes to be shared. Most of the basic ingredients are present. The need is obvious. We must continue to strive for more and better services for the handicapped, especially in the area of post-secondary vocational education. The proper use of our potential and resources must result in greater opportunities for handicapped individuals as they strive to find a meaningful place in our society.

State Planning of Post-Secondary Vocational Education for Handicapped Learners

by

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INTRODUCTION

Post-secondary vocational education for handicapped learners is an important area of concern to vocational and special educators. Effective state planning is critical for providing appropriate and essential services. This paper will attempt to address the following questions relating to state planning of post-secondary vocational education for handicapped learners.

1. What major issues exist in the delivery of post-secondary vocational and technical education to handicapped individuals?
2. What is the current status quo relative to post-secondary vocational education for the handicapped in statewide planning?
3. What barriers exist in state level interagency cooperation and agreements relative to post-secondary vocational education for the handicapped?
4. What are some exemplary state plan policies relative to post-secondary vocational education for the handicapped that states should consider adopting?
5. What functional recommendations can be made to state plan writers and reviewers (internal and external to the agency) relative to post-secondary vocational education for the handicapped?

6. What recommendations can be made to the Federal government for modifying and improving state planning relative to post-secondary vocational education for the handicapped?

Each of these questions will be dealt with in the order in which they have been presented. However, it is important to realize that there are interrelationships among the questions and that certain responses to one question may have relevance to one or more of the other questions. An attempt will be made to avoid unnecessary redundancy. It is also important to realize that many things that may be said about post-secondary vocational and technical education for the handicapped apply similarly to other levels of education for the handicapped.

MAJOR ISSUES

The first major issue regarding delivery of post-secondary vocational and technical education for handicapped individuals probably is best paraphrased in the question asked by Shakespeare's Hamlet; "To be or not to be?" Public Law 94-142, Section 504, and the White House Conference on the Handicapped are all rather insistent that such education will be delivered. However, it is not being delivered for any significant number of handicapped individuals other than among those who are deaf or deaf-blind. The presence of an NTID at RIT, three federally sponsored regional postsecondary technical/vocational programs for the deaf, sixteen additional post-secondary programs that serve from 41 to over 100 deaf students, and a Helen Keller National Center for the Deaf-Blind that offers vocational and technical training to the adult deaf-blind, are examples of programs that have no match for visually-impaired persons, orthopedically-impaired persons, persons with learning disabilities, or persons with other handicapped conditions.

A second major issue regarding delivery of post-secondary vocational and technical education for the handicapped is imbedded in the question, "Who shall deliver?" If we are going to deliver what the laws state must be delivered, then we need teachers who are prepared to deliver. We need post-secondary educational institutions or other career training institutions or at least sheltered workshops that are equipped to deliver. We also need federal, state, and local government agencies that are prepared to cooperate with one another in supporting and in monitoring the quality of delivery.

A first corollary to our second major issue is, if we are to have teachers who are prepared to deliver, what will be the nature of these teachers? Ideally, each vocational or technical instructor of any person with a given handicap also would be a specialist in how to teach a person with such a handicap. Somewhat less ideally, that instructor would be supported by a resource teacher who is such a specialist. Still less ideally, that instructor, along with others who teach persons with other kinds of handicaps, would be supported by a resource teacher who is a generalist regarding handicapping conditions and not a specialist in any one such condition. At the very least the instructor should have as a result of either preservice or inservice training, an attitude, awareness, or a sensitivity that will help him to gain an understanding of the characteristics of the handicapped student. This will in turn assist him to teach that student. In any final analysis, it would be wrong to ask any one instructor to be prepared to teach every handicapped person regardless of disability.

At this point in time, there is little if any training regarding the handicapped in the preservice training of post-secondary teachers of vocational and technical skills. Also, there is little in existing inservice training for such teachers. Preservice and inservice training programs hold promise as change agent approaches.

A second corollary regarding the "who will deliver" issue is, if we are to have post-secondary educational institutions or other programs which are equipped to deliver, what will be the nature of those institutions or programs? If Section 504 were interpreted by the strict constructionist to arrive at the ideal, every post-secondary educational institution and career education program serving adults that receives federal support would become equipped to serve the need of persons with any kind of handicapping condition. A more realistic ideal would be to have selected institutions and/or programs become equipped to serve the needs of a critical mass of persons with the same handicapping condition. There are not any institutions currently equipped to serve the needs of all kinds of handicapped persons. Outside of the programs equipped to serve the deaf or deaf-blind mentioned earlier, there are few if any programs equipped to serve large numbers of other kinds of handicapped persons.

A third major issue regarding delivery is found in another simple question, which may be another way of saying "who will deliver;" i.e., "Who will pay?" Certainly undertaking post-secondary vocational and technical education for anyone is expensive. Such education is more expensive for handicapped persons because of such things as additional human resources for special teaching or support services, facilities

modification, and special equipment. The cost of overall implementation is compounded because of the need for special training programs for teachers and support personnel. The questions concerning who should be responsible for the cost of such programs are mixed. Section 504 and some incidental court cases suggest that the institutions and programs are responsible if they already receive federal funds. Institutions and programs argue that the cost is far too high and that, if the federal government wants it to be done, it should be responsible for the cost. Public Law 94-142 places some onus on state and local school districts.

Divisions of Vocational Rehabilitation are frequently uncertain about what role they should or will play. Local vocational rehabilitation services tend to limit their assistance to "poor" families, thus denying support to a wide range of individuals. It appears to be the classic bureaucratic syndrome of no one knows for sure who is responsible and, therefore, the "buck stops" nowhere. At the same time there are not very many "bucks" in the fiscal sense of that word!

A fourth major issue has to do with the question often addressed to the handicapped person, which is, "Are you prepared?" Many of them will argue that they are prepared to enter a post-secondary vocational-technical education program. Some are right and some are wrong. Institutions in return will tell these persons that they are or are not prepared. The institutions can also be right or wrong, depending on the individual about whom they are talking.

Section 504 insists that any handicapped person who is otherwise qualified for entry to a given post-secondary educational program

cannot be denied entry to that program. The fascinating piece de resistance to this insistence of Section 504 is that any educational program which is unqualified for serving such a student cannot be denied the right to admit that student. We, therefore, witness a proliferation of post-secondary programs for the hearing-impaired; because the hearing-impaired have become vulnerable. In contrast, we witnesss an uncertainty and, therefore, an unwillingness to take a risk with other handicapping conditions among post-secondary programs that can provide vocational-technical education. An exception is the program of the Denver Community College. However, evaluations of that program have not been reviewed.

With the facts of 504 as a mandate and many institutions or programs in the dilemma of whether to admit or not to admit the handicapped, two recommendations are offered. The first is that those most qualified institutions should be helped to become equipped to serve the needs of a critical mass of persons with the same handicapped condition. Most of these institutions can be defined as "qualified," some of whom can be taken in as "low risk," although not qualified. The second is an advocacy that all handicapped persons be exposed in their pre-school, elementary, and secondary education to what has become known, thanks to Sidney Marland, as career education. If this could be done, especially with appropriate "hands on" and "true job involvement" experiences; there would be a better preparation of handicapped persons for post-secondary vocational-technical education.

Still another issue about delivery has to do with the question of "What is the least restrictive educational alternative?" This is the

prescriptive language of Public Law 94-142 which has come to be interpreted almost universally to mean educational mainstreaming for all handicapped persons from age 3 through 21. It is evident that some handicapped persons can be educationally mainstreamed at all points in their lives. It appears evident that for most handicapped persons that the only post-secondary vocational-technical education opportunities that can be made available today are those that can be attained by being educationally mainstreamed in programs designed for non-handicapped persons. However, as society deals with the fuller implementation of Section 504 and Public Law 94-142, let us not be prone to oversimplification. There are six cautions to be kept in mind, not only regarding handicapped persons who are at the post-secondary ages of eighteen and older, but also those who are in their earlier preparatory years.

First, not all handicapped persons wish to be mainstreamed during every aspect of their education and some may wish never to be educationally mainstreamed. Also, not all parents of handicapped children wish to have their children mainstreamed at every point of education. As an example, some parents of deaf children may rightfully believe that the least restrictive alternative for their child is a residential school; and some parents of deaf children, for instance, may additionally believe that the least restrictive alternative is an oral school for the deaf. Therefore, 504 and 94-142, are really the educational and employment "bill of rights" of handicapped persons and their parents; and they should always retain the right to public attitudinal and fiscal support for the alternative which they choose.

Second, not all handicapped persons can be mainstreamed during every aspect of their education; and some can never be mainstreamed. For example, 25 percent of today's NTID students, all of whom are at the post-secondary level, enroll in classes which are exclusively for deaf students; nearly 50 percent more have most of their classes with deaf students only; and almost all of the remaining 25 percent have some classes which are for deaf students only, such as classes devoted to the development of communication skills.

Third, for handicapped persons to be mainstreamed in the most ideal sense, for example, making a living and living a life on par with and among non-handicapped persons, they do not have to be mainstreamed during every aspect of their education. In this case, "to be mainstreamed" is a goal; not necessarily a means to that goal!

Fourth, it is unrealistic to think that every school district in the United States can provide all that is needed to all handicapped children residing in that district in order for them to be properly educated. This cannot at any time be a cost-effective and cost-efficient way to accomplish mainstreaming. Districts must pool their resources. In some cases the pooling may have to be statewide; in other cases it may have to be on a regional basis. At the post-secondary level, as at NTID, it may have to be on a national basis.

Fifth, educational mainstreaming of the handicapped, if properly done, is very costly. It requires that handicapped children at all levels of their education have teachers who are fully trained to deal with them or who have received extensive inservice training. It requires that handicapped children at all levels of their education have

specific and thorough attention from language specialists, speech pathologists, audiologists, physical therapists, and guidance counselors. They must also be provided tutors, notetakers, interpreters, and special counseling, including psychological counseling, when needed.

Sixth, educational mainstreaming of the handicapped, if not properly done, is also very costly. If the patterns of mainstreaming that have been used in the past continue to be used, most of our children will be cheated in the same ways that they have been. A great number of dollars will be expended in their later years trying to make up for it. For example, handicapped children taught in regular high schools by subject matter specialists who do not know how to teach the handicapped are generally no better off than handicapped children taught in residential high schools by teachers who are not subject matter specialists!

CURRENT STATUS

A report to Congress was published in 1974 by the Comptroller General of the United States which was entitled, What Is the Role of Federal Assistance for Vocational Education? On pages 24 and 25 that report there are eight paragraphs which essentially say that statewide planning for vocational education of whatever kind and for whatever subpopulation was not existing. A typical paragraph reads as follows:

> "Needs assessment is not performed in the States to determine the nature and extent of individual and community requirements for vocational education. State plans are developed around the amount of funds expected to be available, rather than on the basis of relative needs. The failure to assess needs can be attributed to inadequate guidance from OE - particularly the regional office(s) (Staats, 1974)."

The status quo of state planning appears no different today than it was in 1974. Here are quotations from anonymous persons who are in a position to know and were conferred:

"At best planning is sparse."

"There is a dire need for a comprehensive needs assessment of the population."

"There is no plan anywhere to address the needs of the handicapped at the secondary or post-secondary levels, because it is not considered a priority in the minds of management."

INTERAGENCY BARRIERS

The third question has to do with barriers to state level interagency cooperation and agreements. Pages 25 through 30 of the 1974 report of the Comptroller General deal with this question. In short, those pages say that the multiple jurisdictions regarding vocational education operate in virtual isolation. More specifically, the report says the following:

"..., we observed minimal coordination in actuality at national, state, or local levels between organizational entities providing vocational services, and even less cooperative effort. Without such collaboration, there is little opportunity to improve the use of federal funds or to insure that student and community needs are being met (Staats, 1974)."

Anonymous testifiers make that same statement. Here are some quotations from them:

"What is missing is interagency communication."

"People are guarded in terms of their own turfdom."

"Professionals in the several agencies lack familiarity with the range of handicapped conditions and how post-secondary institutions can deal with them."

"There is limited cooperation among the elementary, secondary, and post-secondary educational levels."

However, there is hope. Ernest Boyer, before he left office as Commissioner of Education, persuaded the Bureau of Education for the Handicapped (BEH) and the Bureau of Occupational and Adult Education (BOAE) to work closely together to endorse a comprehensive vocational education program for every handicapped person. "For our part," he said, "we will... expand our agreements among bureaus and agencies who work with handicapped persons in the areas of special education, vocational education, and rehabilitation services, and encourage similar cooperation at state and local levels... (Boyer, 1978)." In addition BEH is now advocating that the regulations for the Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendments of 1978 be amended to include the following statement:

"The state plan must assure that the state agency enters into cooperative agreements with state educational agencies, including those agencies administering the Education of the Handicapped Act and the Vocational Education Act ..." (_____, 1980).

Another positive direction is the presence of an Assistant Secretary of Education and Rehabilitation for the Handicapped in the newly created Department of Education.

EXEMPLARY POLICIES

There is no exemplary state plan for providing post-secondary vocational technical education to handicapped persons. Therefore, the following recommendations about exemplary policies for state planning have little basis in any existing state plan. However, listed below are some policies that are recommended:

1. Prepare a plan from reliable data.

2. Prepare a plan that is comprehensive; such a plan will:

   a. Provide opportunities in post-secondary educational institutions for all handicapped persons who are qualified and for some who are not qualified but appear to be "low risk;"

   b. Provide opportunities through other programs for those handicapped persons who are not admissable to a post-secondary educational institution; and

   c. Provide all special human resources, equipment, and facilities required for educating handicapped persons.

3. Prepare a plan that avoids proliferation of programs; if deemed appropriate, work with other states to set up regional programs; when possible, take advantage of regional or national programs that already exist. The plan should forbid restricting post-secondary opportunities for the handicapped to those options available in one's own state.

4. Prepare a plan that provides for options.

5. Prepare a plan that provides for career education for all handicapped persons during their elementary and secondary education.

6. Prepare a plan that provides for continuing education for all handicapped persons.

7. Prepare a plan that requires preservice and inservice training programs for post-secondary vocational and technical teachers and supportive personnel who teach and provide support services to the handicapped.

FUNCTIONAL RECOMMENDATIONS TO STATE PLANNERS

The functional recommendations to state plan writers and reviewers would be the following:

1. Avoid and reject a plan which reflects compliance rather than a real plan that will be implemented.

2. Avoid and reject a plan which does not insist on systematic ongoing assessment of needs.

3. Avoid and reject a plan which does not insist on real cooperation among various state and local educational and rehabilitation agencies.

4. Avoid and reject a plan which has not been developed through the use of expert advisory councils.

5. Avoid and reject a plan which does not provide for ongoing evaluation based upon adequate data.

RECOMMENDATIONS TO THE FEDERAL GOVERNMENT

Finally, based upon the total analysis of the situation regarding post-secondary vocational and technical education and other matters regarding the handicapped, the following recommendations regarding the federal government are suggested:

1. Congress should not pass laws or amendments to laws for which it is unwilling to appropriate the necessary dollars required for implementation; there simply has to be more

federal dollars made available for quality implementation of any comprehensive plan for serving the handicapped.

2. Professionals in federal agencies must be capable and willing to provide assistance to state planners who are expected to follow federal regulations.

3. Federal regulations need to be better written; they often are vague; sometimes they conflict.

4. Professionals in federal agencies should insist on quality post-secondary programs for the handicapped; in general, such programs can be achieved through selection of special institutions to provide special programs for a critical mass of persons with the same or similar handicapping conditions. Special federal funding is required to achieve this end. Strict adherence to the principle of non-proliferation is also required; six hundred local post-secondary programs with minimal support add up to "window dressing," whereas ten regional or national programs with optimum support are much more apt to get the job done.

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Needs Assessment in Post-Secondary Vocational Education for Handicapped Learners

by

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All the worlds a stage,
And all the men and women merely players.
They have their exits and their entrances,
And one man in his time plays many parts.

INTRODUCTION

As You Like It Act I, Scene VII

Handicapped people are expected, by society or circumstance to play many roles. They have become well acquainted with stereotypes, discrimination, prejudice, and attitudinal barriers to acceptance. Recent legislative mandates have opened up educational programming and accessibility to the handicapped. These laws have opened the doorway to a greater degree of educational accessibility, to better vocational training and to increased participation in the mainstream of society. However, laws do not necessarily overcome the injustice of those hidden barriers that restrict the normalization process. Handicapped individuals must assist in the process of eliminating the barriers to education and employment if they are to become productive members of our society. Equality of opportunity is mandated by legislation such as P.L. 94-482. Yet the critical question may be: Is vocational education available for all students who can benefit from vocational instruction? This paper proposes to look at the planning process, specifically, needs

assessment as it relates to vocational education of the handicapped in post-secondary institutions.

Public Law 94-142, the Education for All Handicapped Children Act of 1975, states that: children ages three through twenty-one must be placed in the least restrictive environment, non-discriminatory testing measures should be utilized in placement of the handicapped in post-secondary institutions, and students should receive due process. The Educational Amendments of 1976 (P.L. 94-482) insure that ten percent of programmatic monies will be spent on handicapped students in regular vocational programs. This reinforces Public Law 94-142 and assures handicapped students accessibility to vocational programming. Section 503 of the Rehabilitation Act of 1973 (P.L. 93-112) specifies that school systems must identify the barriers to accessibility for the handicapped within their programs. Section 504 mandates that all school systems make their facilities and programs accessible to handicapped students. Each piece of legislation deals with the removal of educational barriers, internal or external, and for increased program accessibility of handicapped individuals.

There is a number of similarities and differences between the various pieces of legislation that causes confusion and/or overlap to those people preparing programs and services for handicapped individuals.

Vocational Education Legislation (P.L. 94-482)	Special Education (P.L. 94-142)	Rehabilitation Amendment (P.L. 93-112, Sections 503 and 504)
1. "Mentally retarded, hard of	1. "Deaf, deaf-blind, hard of hearing,	1. "One who has a physical or mental impairment

hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled or other health impaired including learning disabilities"	multi-handicapped, orthopedically impaired, emotionally disturbed, specific learning disability and chronic illness"	which substantially limits one or more life activities"
2. 10% set-aside spent for handicapped in vocational education	2. 3-21 year old	2. Appropriate education to meet the needs of handicapped as adequately as non-handicapped
3. Must be consistent with state plan submitted under 94-142	3. Provide handicapped with variety of program options available to non-handicapped children	3. 16 to adult
4. Establish advisory council	4. Written individual education plan for each child	4. Appropriate assessment to determine needs
5. Open to maximum extent possible - regular vocational education programs	5. Least restrictive environment	5. Handicapped to be educated to the maximum extent possible with non-handicapped
6. 16 to adults	6. Multi-faceted assessment	6. Handicapped persons or their representatives must be involved in planning for accessibility
7. Qualifications - inability to succeed	7. Include a continuation of alternative placements including vocational education if it met the needs of the handicapped child.	7. "Most integrated setting appropriate"

8. Due process procedure established	8. Open communication established for program accessiblity
	9. Program accessibilty
	10. Qualification - inability for employment.

After reviewing the similarities and differences of the legislation one can then begin to look at the planning process for vocational education (job-entry skills) for handicapped individuals.

WHY POST-SECONDARY VOCATIONAL EDUCATION FOR THE HANDICAPPED?

One in every four handicapped individuals is unemployed (Phelps, 1977), yet we have not addressed the area of post-secondary education for the handicapped in any kind of consistent and comprehensive planning model. Post-secondary education is indeed a means to achieving 1) vocational training, 2) articulated development of youth programs in secondary schools, 3) employability, and 4) retraining and/or updating of skills. Continuing education of adults and youth employment (16-24) has been identified as an area of increasing concern by the American Vocational Association. However, we have not dealt effectively with handicapped individuals who have received no vocational training and have no job-entry skills. Many handicapped individuals have never received vocational training, cooperative work experience, or vocational exploration during their elementary and secondary education. Many of these individuals were segregated from the mainstream during their educational development. They were not taught the necessary skills to secure employment and were not job-ready.

Post-secondary vocational education programs can serve these individuals and facilitate normalization of handicapped individuals into society. A system for program planning must be developed if we are to articulate the needs of handicapped individuals within our society.

The concept of open entry, open exit which most community colleges adhere to is perfectly suited to the handicapped population. This concept removes the stigma and discrimination involved in the labeling process of earlier schooling. Ideally, handicapped individuals should be able to enter the educational system at their current level and exit at their maximum capabilities. This is commonly not the practice. Often times handicapped individuals cannot enter programs because of low test scores, low reading levels, stigmas associated with labels, safety precautions, and many other barriers that are perceived by the educational community as reasons for non-entry.

What about those individuals with hidden handicaps? These handicaps cannot be seen or are not readily identified. These individuals may never have been identified as handicapped in their earlier school years; or information concerning their learning problems has not been articulated with the post-secondary institution. In the community college setting, handicapped individuals are able to enter directly into programs because the handicapping condition is not of a visable nature. As a result, the students are often discriminated against unintentionally. How do we eliminate some of these barriers to accessibility? How are we to help these students achieve success in job-entry training? How do we identify the learning needs of the students and work with their strengths? These questions exemplify the need for comprehensive

student assessment and prescription based on their learning needs so that students can reach their maximum potentialities within the educational environment. Every student has the right to fail. Are they given the right? It is the premise of this author that we must look at what students can do, not at what they cannot do. Efforts should be directed toward maximizing their potentialities and minimizing their learning deficiencies.

> "Paradoxically, while our society fears and condemns dependency, while it continues to condemn public welfare as an alternative to work, it offers only little or no opportunities for work. Its chronic toleration of large amounts of unemployment of able bodied and disabled body workers suggests an unwillingness to face reality and to deal with its fears. It wants to solve the problem of unemployment and dependency by surrendering to the natural force of market place, or by indulging in rhetorical rages. If people are to become independent, jobs must be made available in wage ranges that do not diminish a persons sense of dignity . . . For unless work becomes available after the rehabilitation and educational processes are completed, it would appear to both professionals and persons seeking work that the rehabilitation of educational processes were dead end roads, consuming time, money, and energy toward an outcome can only be called a hoax (Wolfenberger, p. 159)."

We must examine the talents, abilities, and aptitudes of disabled America if we are indeed to give the handicapped a chance to be productive members of our society. Do we assume that a person is a failure if he/she does not hold a job. If failure is described in this manner we have not done our job in the educational process. How do we bridge that gap between education and work? How does the handicapped population overcome the attitudinal barriers associated with employment? The attitude of employers, teachers, counselors, and others toward the handicapped individual has become the discriminating barrier. How do we remove these barriers and train people for jobs?

Our society has defined productivity in terms of work. What is the formula for handicapped individuals to be productive? Wolfenberger states "the principle of normalization is based on man's tendency to be normal, i.e. as self-sufficient as possible. Man wants to manage his own affairs as far as is possible and the principle of normalization utilizes this natural and normal tendency (p. 163)."

It appears that program planning is critical to the success of the handicapped individual within the educational environment. A comprehensive system of assessing the needs of the handicapped must be completed if we are to adequately serve the handicapped population in this country today. One of the most effective methods of program planning is needs assessment.

NEEDS ASSESSMENT

Needs Assessment has been identified as one of the ways through which successful program planning can be accomplished. A comprehensive needs assessment is a critical component of good long-range planning. Needs assessment was mandated by Public Law 94-482, "Funds are to be distributed by the State to eligible recipients on the basis of annual applications which describe the vocational education needs of potential students in the area of the community served by the applicant." A comprehensive needs assessment should look at all the areas involved within the educational environment, i.e., students, programs, facilities, teacher materials, equipment, and teacher preparation. If conducted in a thorough and systematic way, programs will more likely meet the needs of all students. Needs assessment has been defined as

"a systematic procedure for determining the discrepancy between existing and desired levels of attainment with respect to specific educational goals (Ahmann, p. 5)." Needs assessments may be objective: manpower data, test scores, students' data, or subjective: perceiving the needs of students, employers, or teachers. Using this model, the greatest need identified would be the target for services. Defining educational needs in this way would necessitate use of the discrepancy definition or the difference between "what is and what ought to be."

There are many kinds of needs assessments. They seem to differ, in scope and quality. Ahmann states, "it is difficult to identify a representative cross-section of needs assessment (p. 11)."

Types of Needs Assessment

(Adams, 1977 pp. 36-54)

1. Objective discrepancy analysis. Student performance is measured by objective means (for example, by using standardized tests or work products), and compared to desired status on a set of predetermined goals. Desired status is estimated by student, educator and/or community judgment. Actual status is compared to desired status to identify high priority needs (Hoepfner, et al., 1972).

2. Subjective discrepancy analysis. Only subjective information is used to estimate for each educational goal the level of student performance that should exist and the level which actually exists. Ordinarily the opinions of reference groups (students, teachers, employers, and others) are obtained and summarized for both "what is" and "what ought to be." The results are analyzed to locate large discrepancies (Rose et al., n.d.; Hamilton, 1973).

3. Self-perceived needs discrepancy analysis. Students alone estimate independently the levels of their skills in terms of pertinent objectives; their perceptions of "what is" are compared with composite opinion of "what ought to be" (Witkin, 1975; Copa and Maurice, 1976).

4. Interactive needs assessment. The constituents of an educational unit systematically interact to generate goal statements. Opinions of their importance and current status are analyzed to estimate needs (Ascough, 1974).

5. Objective needs assessment. Needs are inferred from objective data obtained from outside sources such as job market forecasts from the Bureau of Labor Statistics or achievement test results from large-scale assessments (U.S. Department of Labor, Bureau of Labor Statistics, 1969-1975; National Assessment of Educational Progress, 1976).

6. Subjective needs assessment. A single rating scale or questionnaire is used to obtain from respondents their opinion of the relative importance of a group of needs or the desirability of continuing certain educational practices.

These six types of needs assessments can be broken down into two categories for data purposes: 1) discrepancy analysis, and 2) subjective analysis.

Research seems to indicate that most efforts at needs assessment have not been systematic nor comprehensive in nature. The most typical forms of needs assessment are: 1) surveying students, 2) surveying teachers, 3) needs assessment of educational goals, 4) needs assessment of employers, 5) self assessment, and 6) expert opinion. Analysis of needs assessment data varies according to the scope of statistical analysis and the use of hard data, i.e., test scores, employment, labor market trends, and others.

The literature indicates that most needs assessments survey only teachers. If this is the case, once again, the systematic and comprehensive techniques of good data gathering and research are not applied to the area of needs assessment in program planning. A comprehensive view of needs assessment would have to survey all areas that are involved in the educational process. A number of problems and issues associated with needs assessment methods have been identified by Ahmann (p. 22).

1. Definition of the term "need." The definition of the term "need" is still questionable. To consider it the difference between "what is" and "what ought to be" makes a "need" a "want" and leads to confusion. It may be better to consider a "need" the difference between "what is" and "what is satisfactory." Every effort must be made to sharpen the definition of the term "need" in the minds of all reference groups associated with a needs assessment, to reduce the possibility of a major flaw in subjective discrepancy analysis.

2. Performance needs and treatment needs. Needs assessments typically determine performance needs and virtually ignore treatment needs. A performance need is an identified deficit in student achievement in some aspects of the educational program. A treatment need is determined by evaluating possible treatments to find the one which best produces the desired student performance without inappropriate side effects (Scriven and Roth, 1978, p. 5).

   A complete needs assessment must identify not only the nature of existing performance needs but also program changes (that is, treatment needs) which suitably satisfy these needs. Furthermore, administrators are greatly assisted if the needs assessment catagorizes performance needs into two groups--those for which their educational institution has primary responsibility, and those for which other educational institutions or social agencies have primary responsibility.

3. Levels of intensity of educational needs. No matter how they are defined, needs exist. But are they of sufficient intensity to justify remedial action? Obviously, formulating educational goals and establishing their relative priority is not, by itself, a needs assessment. The crucial question is whether the outcome levels of existing programs are adequate and, if not, whether the performance deficits are severe enough to justify important program changes.

   Very often needs assessment methods do not clearly differentiate between basic or continuing needs and incremental or change needs (Scriven and Roth, 1978, p. 6). The latter is more important to us. Decision makers are concerned about change. They want to know whether to increase or decrease the amount of instruction in various areas of their programs in response to existing conditions.

   Another problem is that general goals frequently overlap and do not stand alone (Netusil, 1978). This also prevents a clear differentiation among needs and their levels of intensity. Improvement results if the needs assessment steps are sequential, starting with a manageable number of general goals and, after finding those where performance needs seem to exist, moving to more specific program objectives incorporated within each general goal selected for further study. Performance deficits can be determined for these, providing a clearer view of the nature of existing needs

and an opportunity to probe selectively with regard to their intensity.

4. Combining hard and soft data. For good reason needs assessment in vocational education should include both hard and soft data; the former probably coming from external sources and the latter from questionnaires administered to various reference groups. Combining these data can be awkward. Sometimes it is done in a simplistic manner.

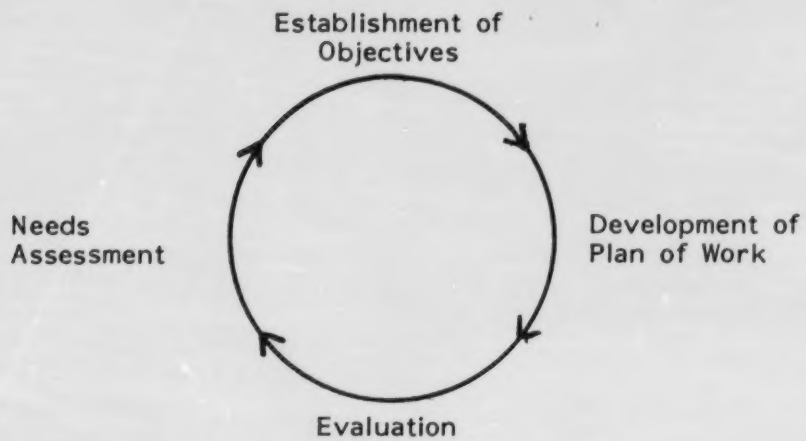
   One problem is the averaging of widely varying opinions of respondents to find a consensus. Much information is lost by this process. A similar over-simplication exists when rankings of job-training needs of various occupations in a cluster are averaged to find the relative rank of that cluster. For instance, two clusters may have approximately the same average rank among all clusters. However, the rankings of occupations included in one cluster may range from very low to very high when compared to all other occupations, while the rankings for those of the other cluster differ little from each other.

5. Continuous needs assessment. Needs assessment should be a continuous process employed during each cycle of a program; during each cycle of planning, development, implementation, evaluation, and revision (Kominski, 1978, p. 13). Too often it is a one-time-only procedure or, at best, a procedure to be used on an irregular schedule.

   Needs assessments build upon each other. Solving the "start-up" problems of the first streamlines those that follow. Findings from a series of needs assessments reveal any trends that exist, not to mention the dynamic features of manpower needs. For these and other reasons, needs assessment procedures should be incorporated into the standard administrative procedures of a vocational education program.

Thus it appears that systematic is the key word for comprehensive needs assessment. This presupposes that a needs assessment "will be objective, operative, ongoing, and sequential (Leske and Frederickson, p. 13)." A problem associated with this kind of planning has been identified by Atteberry (1977). He concluded that a problem with existing needs assessment is a lack of willingness of many vocational administrators to engage in systematic, long-range planning; to consider needs assessment findings as an integral part of that planning; and to

associate needs assessment to program evaluation. Atteberry attributed the previously mentioned situation to three conditions: 1) a rapid incentive to plan, 2) the power of local economy in the educational system, and 3) inadequate training of administrators in management and planning (Atteberry, pp. 149-161). If we are to have effective program planning we must create a process by which needs assessment is an integral component of long-range planning and evaluation. Ahmann asserted "that the lower the interest in long-range planning the less likely it is that the role of needs assessment will expand or that the state of the art will improve (p. 24). An effective delivery system is an ongoing process. An example is illustrated in the following diagram.



Evaluation has been a concern in the design of needs assessment. Many teachers have been afraid that needs assessment would be done to instead of for the individual and used for teacher evaluation purposes. Needs assessment when related to staff development should encompass formative evaluation rather than a summative evaluation. In this way staff development would be looked at as intrinsic to the process for

identification, and prioritizing individual needs. Needs assessment cannot be used as a scape-goat for accountability of teachers but must be used as a long-range planning device for effective program development. If this is to be done successfully, we must look at ways to utilize formative and summative evaluation for the ultimate goal of student success.

IMPLICATIONS FOR POST-SECONDARY PLANNING

The comprehensive needs assessment process has been identified as essential for program development. This has many implications for post-secondary planning for handicapped students in vocational education. If a successful, ongoing program is desired, the framework must be established to describe how the needs assessment activities will fit into the planning process. Utilizing the discrepancy model would entail looking at what exists now and what ought to be. Various areas of concern would be job market analysis, existing program analysis, population analysis, and resource analysis (Gustafson and Severance, 1976).

These analyses could include critical questions which deal with existing discrepancies within the educational program:

1. the number and kinds of jobs being trained for versus the number and kinds of jobs available in the community,
2. the needs of the community,
3. interests and abilities of handicapped students within the program,
4. resources available, i.e., money, personnel, facilities, and equipment,
5. accessibility to programs,

6. number and types of handicapping conditions,

7. program goals compared to institutional priorities and goals,

8. communication network,

9. staff development, content, and specific tasks related to working with the handicapped, and

10. unserved population.

The inherent weaknesses of a discrepancy analysis should be taken into account. The format should deal with: 1) the changing quality and scope of programs, 2) the question of the degree to which certain kinds of students may be served, 3) how student needs will be met after they have been identified (the "how" often becomes the most difficult part of providing services for the handicapped in vocational education), and 4) the identification of barriers to accessibility that deserve the most attention. Questions of quality and degree may need to go beyond discrepancy analysis into other kinds of data collection for effective program planning. One might ask, what kinds of information does our current needs assessment provide and in what ways? Is this information flexible? Can the information be used in various settings and in a variety of ways? What is the complexity of the information? Does it cover all the program components and is it broad enough in scope to cover all the various aspects of program planning? The final instruments and feedback from the needs assessment process should be relevant and useable for the intended population. Assessment in a systematic and comprehensive manner must look at the domains that we intend to assess (Leske and Frederickson, 1979). The more specific the items in a needs assessment, the more relevant and useable the

data. The items should be objective and as closely related to tasks as possible.

AREAS OF CONCERN FOR NEEDS ASSESSMENT OF HANDICAPPED STUDENTS IN POST-SECONDARY VOCATIONAL EDUCATION

1. Needs assessment has had no established structure or guidelines and usually occurs in a sporadic manner resulting from district requests, grants, or a specific need. Recommendation: formulate a systematic approach to needs assessment for post-secondary education.

2. States have not taken a leadership role in utlizing needs assessment for program planning. Many states have utilized "hard data," i.e., student identification, employment, and others, for accountability purposes and for projections in one and five year state plans, but not for program planning. Many institutions use already existing forms from student services and have not carefully analyzed the appropriateness of their data. This, coupled with the lack of follow-up, raises concerns about the reliability of current data. Recommendation: Design a comprehensive model that incorporates all program components and develop reliable instruments and techniques for assessment.

3. Needs assessment has not formally been incorporated into statewide evaluation and information systems. Many states have no formal networks or coordination of services. In addition, split funding sources and separate agencies have caused problems in the

delivery of services. Data is often collected for reporting purposes only and nothing is done with the information. Data often describes "what is" not "what should be." The data usually reflect existing programs not new programs. Recommendation: Ongoing evaluation should be established and linked to state-wide program evaluation. A process should be established that allows for updating and revision based on the identified needs. Accountability should be a by-product not the end-product of evaluation. Frequency and scope of evaluation should be identified.

4. Administrator awareness must be developed if an effective delivery system for the handicapped is to be integrated into vocational education. This would entail an administrative commitment to serve the handicapped in admissions and recruitment, public relations, and effective follow-up and feedback. Recommendation: Administrative commitment should be tied to "incentive" to encourage post-secondary institutions to work with the handicapped. Administrators have been afraid to take risks in establishing new programs and react rather than act.

5. Interagency agreements are non-existent in many states, and have not been developed and followed in a formal manner in others. Overlap often exists as related to funding, personnel, and programs. Post-secondary institutions often do not know what funding sources are available. Coordination and articulation of services are not identified and sometimes contradictory. Recommendation: States should analyze common purposes of agencies

involved and identify approaches to cooperative efforts. They need to agree upon uniform definitions, forms, and referral processes. The agencies should identify what is available and scopes of involvement, i.e., funding, personnel, and resources, of the cooperative agreement. They also need to identify areas of overlap, non-service, and priorities for service. Finally, the agencies should communicate the agreement to post-secondary institutions and identify appropriate contact people.

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Articulation in Post-Secondary Vocational Education for Handicapped Learners

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INTRODUCTION

It is the intent of the writer to present a holistic approach to the articulation process. This demands an identification and analysis of the various elements that are involved in the process. In the context of this paper, the term articulation is used to mean the process of communication. Communication occurs within an educational institution and among educational and adjunct systems. A well-planned articulation process provides for continuity throughout the student's educational experience. This allows the student to complete occupational training more quickly, at less cost, because repetition of learning experiences could be minimized.

Institutional leaders determine the groups among which articulation occurs. No one group is more worthy of attention than another. Each group provides a unique and complimentary contribution to the entire articulation process. However, articulation responsibilities at each level need to be well-defined with established boundaries in order to reduce the potential of repetition and confusion. Efforts toward developing an efficient articulation process should reflect a broad scope of needs analysis, given input from all affected groups. The articulation process is only as good as the information being articulated and as efficient as the dissemination process.

LEVELS OF ARTICULATION

External Articulation

When addressing the needs of the handicapped population at the post-secondary level, specific groups external to the institution may be involved. A cooperative planning effort may include federal and state agencies; local education agencies; local human resource agencies; medical and psychological services; business and industry; parents, students, and advocacy groups.

1. Federal Agencies

In the articulation process, Federal agencies are primarily responsible for:

a. Information dissemination,

b. Quality control of voational education programs and services,

c. Allocation of funds, and

d. Acting as advisors to the vocational education process.

2. State Agencies

State level agencies are responsible for articulation concerning:

a. Program and services accountability,

b. Federal and state regulations,

c. State level allocation of funding,

d. Administration of special grants and programs,

e. Service as institutional advisors, and

f. Roles as liasion among programs and personnel.

3. Local Education Agencies

Post-secondary institutions need to articulate with a variety of groups:

a. Local education agencies,

b. Local human resource agencies,

c. Medical and psychological groups, and

d. Employers.

Communication among post-secondary institutions and local education agencies is a cooperative process designed to provide vocational services without repetition and to enhance the transition of handicapped students from secondary to post-secondary institutions with maximum ease. The rapport among secondary and post-secondary educators is enhanced by the development and implimentation of a well-defined articulation process. Adversary roles and territorial issues can be readily resolved and set aside as the articulation process matures.

4. Local Human Resource Agencies

Local human resource agencies provide complimentary services to the handicapped population. Maximum utilization of resources necessitates familiarization with such groups, their services, and their guidelines. When involving local human resource agencies, vocational educators need to consider the Comprehensive Employment Training Act (CETA), Work Incentive Programs (WIN), Veterans Administration, Vocational Rehabilitation, social services agencies, information referral services and sheltered workshops. Knowledge of these resources and a well-developed articulation plan involving such resources would allow the development of a strong local level network which functions on a cooperative planning basis.

5. Medical and Psychological Services

Medical and psychological professionals provide an often neglected source of information. The aforementioned group can be the most difficult to penetrate and with which to articulate. However, efforts in this direction are well worth the time and energy spent. In the articulation process, medical and psychological professionals are able to provide information on handicapped individuals and on handicapping conditions.

6. Business and Industry

Business and industry brings a unique contribution to the educational process. Accountability in post-secondary vocational education is based upon job placement in both the private and public sectors. Therefore, leaders in business, industry, and education need to be involved in cooperative planning efforts to meet the labor market demands.

Employers determine the training needed for entry into the labor market. Vocational educators then provide the training necessary to prepare the handicapped for job placement. Cooperative planning and communication enables vocational educators to meet not only the labor market demands but also the occupational training needs of the handicapped.

Internal Articulation

When setting up a network of cooperation and articulation, consideration must be given to groups external and internal to the institution. The internal delivery system is highly dependent upon communication

among the internal constituencies, i.e. administrators, faculty, support services, students, and parents/advocates of enrolled students. The responsibility for articulation should be centralized but the process of articulation must be decentralized. For maximum effectiveness, the articulation process must provide for a wide diversity of input. This diversity of input is crucial to the development of good local plans for implementing, improving, and extending educational programs for handicapped learners.

1. Administrators

Administrative decision-makers determine the direction and scope of the articulation process. Administrators may enhance the process and are key to successful implementation. As facilitators of the articulation process, it is the administrator's responsibility to insure information flow and cooperative planning among personnel and departments. Further, vocational administrators are in a position to neutralize adversary roles and territorial issues as they arise. Vocational teachers and support personnel should be involved in cooperative planning, curriculum modification, and program development and implementation. This increases the probability that institutional, program, and personal goals will be congruent.

2. Faculty

Faculty, as direct service personnel, are the key contact with the student and must expand their scope as teachers to include the use and trust of support personnel. Support personnel serve as a back-up to the instructional process. Faculty, as they expand their scope, should

become more open to program and curriculum modification and mainstreaming. Frequently, the faculty are individuals most knowledgeable about the local labor market in their program area. Given encouragement and support, they can become very creative in the transition of the handicapped students into vocational programs and the labor market.

3. Support Personnel

Support personnel serve as a back-up to the instructional process. Although specific resources and personnel vary from one institution to another, vocational guidance specialists, job placement specialists, and special services coordinators may serve as support personnel. There are many non-vocational resources employed in post-secondary institutions. To provide appropriate educational opportunities, vocational educators may utilize nurses, psychologists, counselors, reading and math specialists, learning disabilities specialists, and adult basic education specialists.

Support personnel, a group often overlooked, have the ability to provide specific student information and services. This group can provide educational and career counseling, student assessment, labor market information, and individual tutoring services. Through an open, flexible communication and planning effort, vocational educators can establish effective working relationships with non-vocational support services personnel. No longer must the individual vocational teacher assume the entire responsibility for meeting the needs of handicapped students.

4. Parents and Students

Utilization of parents, students and advocacy groups in the articulation process contributes "grass roots" information to the development of effective vocational programs and services. Drawing upon these resource groups, through advisory committees and task forces enables vocational educators to become informed of community needs and expectations. Integrating this information with that derived from the previously mentioned sources enables post-secondary decision-makers to develop a broad, well-rounded perspective of the needs of the handicapped population.

AREAS OF ARTICULATION

A well-planned articulation model should include a uniformly defined method of information flow and communication in the areas of funding, curriculum, student records, legislation, institutional policies and procedures, and identified student needs. Articulation is not strictly the responsibility of one group. The ultimate future of articulation will lie with the decision-makers in vocational education. Articulation efforts should receive more support on a continuing basis from the federal, state, and local levels. Each institution, department, or agency must, through cooperative planning and communication, define and accept their role in the articulation process.

1. Funding

Vocational educators at all levels need to become aware of the funding sources and patterns available where appropriate for their designated responsibilities. Each educator would benefit from knowledge about the funding policies and practices of agencies as funding

sources become available. A variety of agencies may act as funding sources, i.e. vocational education, special education, rehabilitation, Comprehensive Employment and Training Act (CETA), Bureau of Education for the Handicapped, Bureau of Career Education, and Bureau of Occupational and Adult Education.

A cooperative planning effort emphasizes the creation of a package of funding source information and includes the identification of specific populations that are being targeted by various funding sources. All too often, proposals are sent to the incorrect source. Funding agencies are primarily concerned with funding proposals aimed at target groups, rather than funding programs designed to meet program or institutional needs. Cooperative planning to initiate proposals often permits the provision of more comprehensive programs and more specialized services. When appropriate, encouragement could also be readily given to cooperative contract, grant, and proposal writing designed to introduce new programs and/or to expand existing programs and services to meet the needs of the handicapped population.

Currently, articulation in the funding area varies from state to state. The availability of information is often dependent upon the funding source or upon the professional organizations which publish updated funding information as it becomes available.

2. Legislation

Information on current legislative mandates relating to the handicapped appears to be one of the more effectively planned and implemented models of articulation in vocational education. Individuals at all

levels of vocational education appear to have some basic exposure to legislation for the handicapped.

However, we must now address the information needs of parents, students, and advocacy groups. There is a pressing need for articulation with these groups on information regarding the rights of students at the post-secondary level. The legal rights of students can be protected through the articulation process. More information needs to be disseminated on current legislation, the right to privacy, due process, and equal educational opportunity. The legal rights of students have been relatively, effectively communicated at the secondary level. At the post-secondary level, the need for an articulation process to meet the legislative information needs of parents, students, and advocacy groups is just now emerging.

3. Curriculum

A need exists to further define and delineate the articulation process among secondary and post-secondary institutions. Establishing such a process could prevent duplication of learning experiences, through sharing curriculum goals and objectives and identified minimum program competencies. An effective cooperative planning process could enable handicapped students to make the transition from secondary to post-secondary institutions as easily as possible. It would increase the probability that gaps would not develop in the student's educational experience. Skills and knowledges developed in high school serve as the base for building higher levels of competency in post-secondary institutions. Those handicapped students who can qualify for advanced

placement or those who need special consideration can then be more effectively served.

4. Post-Secondary Policies and Procedures

The articulation of post-secondary policies and procedures could ease the educational transition of handicapped students. Articulation between educational levels involves several components. There can and should be ongoing communication between the administrators at the differing educational levels, jointly agreed to admissions policies, uniform guidance and counseling procedures, and consistency of information available to students.

Communication of policies and procedures must exist among constituencies of each institution. This insures the probability of greater success in meeting the needs of the handicapped population and in providing the least restrictive environment. Policies and procedures articulated among parents and students who are not enrolled in post-secondary institutions provide the information necessary for effective decision-making regarding the student's future enrollment.

5. Student Needs

It is now up to the emerging vocational special needs professionals to articulate the availability of access to all facets of vocational education - to regular programs, special programs, vocational guidance counseling, youth organizations, and cooperative vocational programs. In addition, parents and students need information on building accessibility, due process, career development opportunities, non-discriminatory evaluation and assessment services, and labor market information directed toward the handicapped population.

Vocational educators have an important need for a student needs assessment model to be developed and implemented at the national, state, and local levels. In those states where student needs assessments have been completed, the results are available. A student needs assessment model would provide vocational educators with the information necessary to modify curricula/programs and to provide additional support services.

Efforts to meet the needs of the handicapped population will grow increasingly more effective as articulation of student records and background information become more refined. The support personnel in vocational education are just beginning to set up articulation channels, internal and external, to their individual institutions. Information which currently is being articulated is verbal, where rapport exists; academic transcripts and achievement testing information; and that information which is shared by the students and parents.

Information which could readily enhance the ability of vocational educators to meet the needs of handicapped students lies in the receipt of comprehensive background information on students and includes:

a. Health and medical records,

b. Social skills information,

c. Educational records,

d. Psychological records, and

e. Work experience records.

Receipt of such records enables the vocational educator to envision the total student and to analyze the existing data to determine student

needs, and to take appropriate measures to provide the most appropriate educational experience.

The roles of vocational instructors, guidance personnel, and special needs personnel should be clearly defined within the articulation process. In order to protect the student and parental rights to privacy, post-secondary institutions should designate key personnel for articulation of student record information. It would be beneficial for the chosen personnel to have:

a. Sensitivity to student needs,

b. The knowledge, education, and experience necessary to interpret and integrate the information, and

c. The skills necessary to articulate this information as needs dictate.

Communication of student record information is perhaps the most sensitive area in the articulation process. Handicapped students have encountered many restrictions in the past and, as a result, often prefer that little or no information be shared with their instructors. Sensitivity to this issue requires that the communication of student records be specifically defined within the articulation process.

CONCLUSION

No known nationally accepted articulation model for meeting the needs of the handicapped in vocational education exists. Articulation efforts vary from state to state and from one educational system to another. It would appear that a preconceived model of articulation would not effectively serve the needs of the handicapped population. Rather, it is suggested that models be cooperatively designed at the national, state, and local levels. Such a model should identify:

a. Existing and potential articulation problems;

b. People who would be involved in the articulation process;

c. The services which would be provided as a result of the process;

d. The system within which the articulation process is to be implemented; and

e. The delivery model which is to be implemented.

Articulation is a process which is ongoing. As with any effective process, the process itself should be continually evaluated and modified as needs dictate. In evaluating the success of the articulation model, key questions need to be asked which include:

a. Is there an identified referral process from the secondary to post-secondary levels?

b. Is the curriculum coordinated between the secondary and post-secondary levels?

c. Do articulated programs reflect labor market demands?

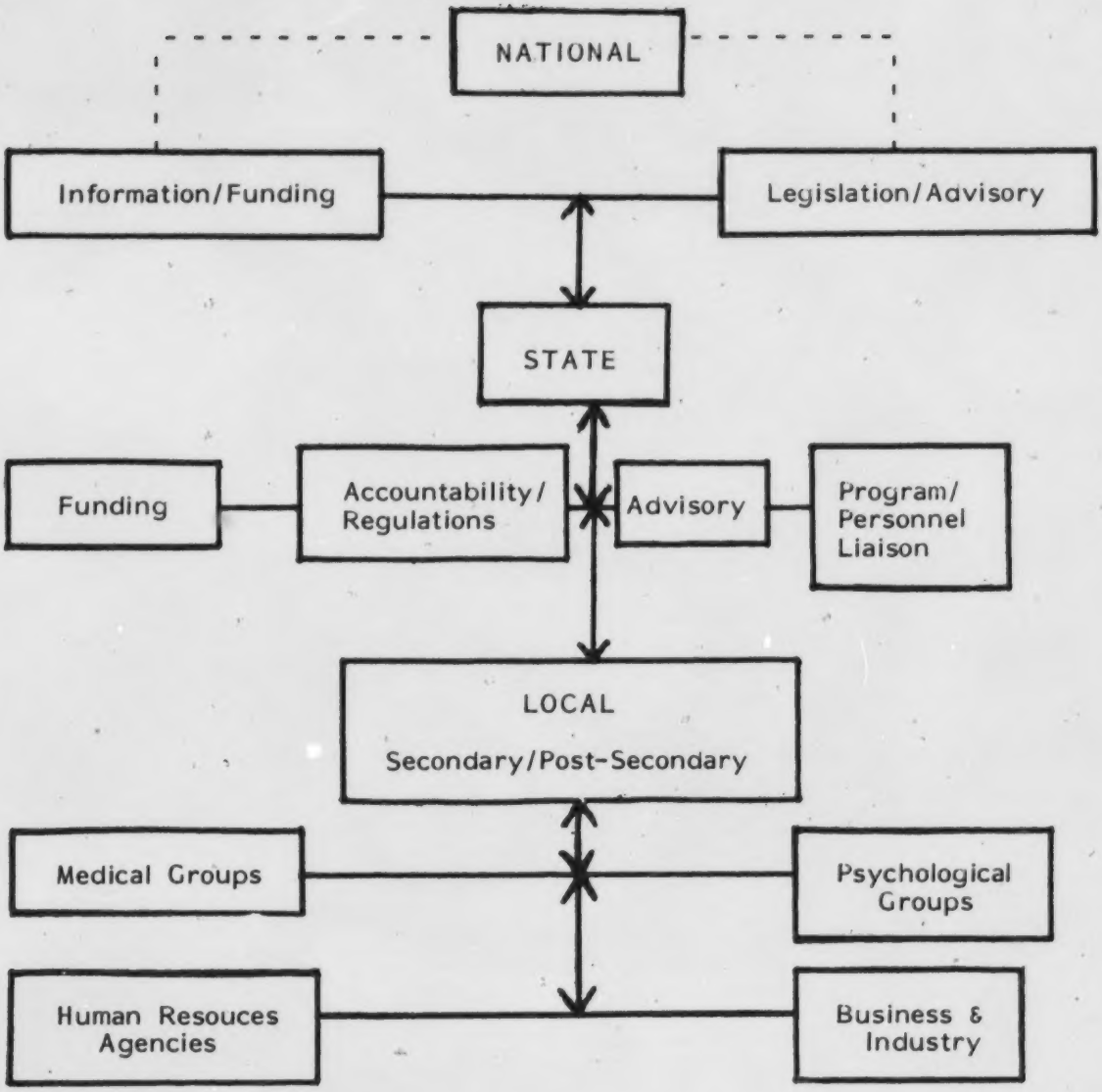
d. Is there an identified career ladder built into the articulation process?

e. How far did the student progress along the career ladder?

While these are but a few of the important questions which should be utilized in evaluation of the articulation process, it is essential that evaluative procedures be determined prior to implementation of the articulation model.

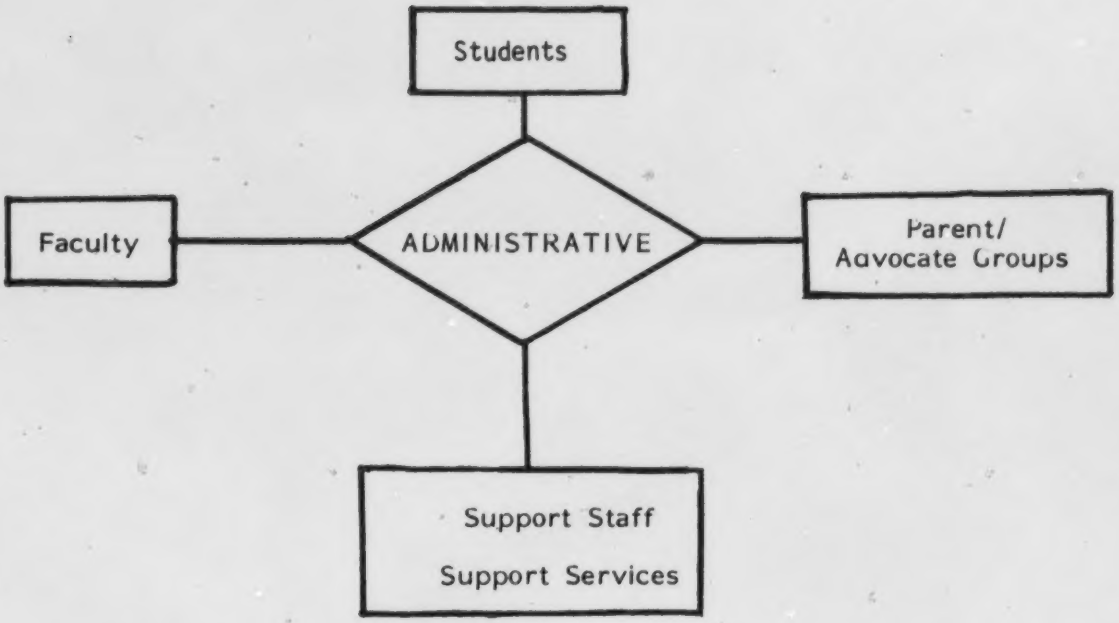
APPENDIX A

External Articulation



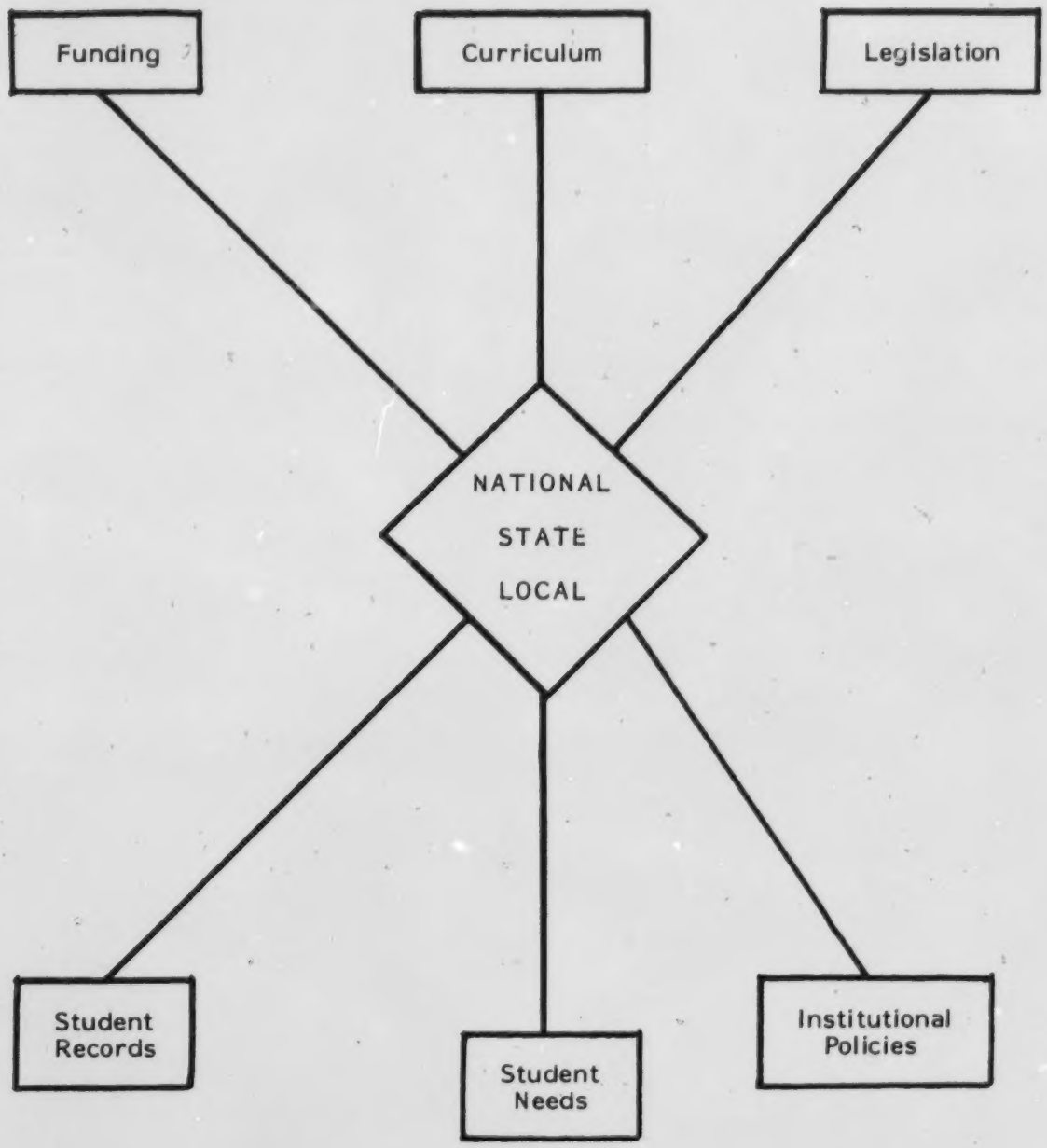
APPENDIX B

Internal Articulation



APPENDIX C

Areas of Articulation



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Support Services in Post-Secondary Vocational Education for Handicapped Learners

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INTRODUCTION

"We can do anything we want to do if we stick to it long enough (Helen Keller)."

During the past 10-15 years new federal and state legislation and initiatives have provided convincing incentives for greater responsiveness to the needs of handicapped students in post-secondary education. As a result, the nation's colleges and universities are facing challenges and demands from these students which can no longer be evaded. Increasing identification and enrollment of handicapped students has necessitated the development of relevant and essential support services and programs to meet their special needs.

The purpose of this paper is to stimulate the creative abilities of both special and vocational educators to alleviate those obstacles inhibiting access to occupational education in post-secondary educational institutions. By federal mandate, handicapped students (heretofore considered uneducable, non-productive, non-contributing and dependent members of society) must have access to educational opportunities on a par with all other students. This concept has been identified as "mainstreaming" the handicapped. The mainstreaming approach mandates that handicapped individuals be integrated, without discrimination, and be afforded equal opportunity to compete in educational programs of their choice. To achieve this goal, the colleges must provide special services

to counteract the physical limitations imposed upon handicapped learners in order to create equality of opportunity.

Although significant progress toward serving the student with disabilities has been made, it has been slow in development. The background of the problem, the current status of the handicapped in vocational education, the personnel issues related to serving handicapped students, the nature and extent of support services needed, the need for interagency articulation, and an evaluation model of such special programs will be discussed in this paper.

BACKGROUND

Brubacher and Rudy (1966) assert that one of the distinguishing features of American higher education is the broadening and democratization of colleges and universities so that more and more persons have the opportunity to secure some type of post-secondary training. Additionally, they note that a fundamental principle of American democracy is "free access to all individuals to the full content of the advancing body of knowledge." This concept of "free access" for all citizens was initially advocated by the President's Commission on Higher Education (1948) in a report, Higher Education for American Democracy. The report stated that:

> "To make sure of its own health and strength, a democratic society must provide free and equal access to education for the youth, and at the same time it must recognize their differences in capacity and purpose."

Throughout the history of American higher education, colleges and universities appear to have been called upon at one time or another to make provisions for physically handicapped students. Prior to World

War II, however, most of the accommodations had been made on an individual, ad hoc basis rather than as part of a formal, organized program of services specifically designed to meet the unique needs of students with disabilities.

Perhaps the earliest indication of the need for special consideration of a handicapped student in higher education is found in the following letter to the Academic Board of Radcliffe College:

> Dear Sir:
>
> As an aid to me in determining my plans for study this coming year, I apply to you for information as to the possibility of my taking the regular courses in Radcliffe College.
>
> Since receiving my certificate of admission to Radcliffe last July, I have been studying with a private tutor, Horace, Aeschylus, French, German, Rhetoric, English History, English Literature and Criticism, and English Compositon.
>
> In college I should wish to continue most, if not all of these subjects. The conditions under which I work require the presence of Miss Sullivan, who has been my teacher and companion for thirteen years, as an interpreter of oral speech and as a reader of examination papers. In college she, or possibly in some subjects someone else, would of necessity be with me in the lecture room and at recitations. I should do all my written work on a typewriter, and if a Professor could not understand my speech, I could write out my answer to his questions and hand them to him after the recitation.
>
> Is it possible for the College to accommodate itself to these unprecedented conditions so as to enable me to pursue my studies at Radcliffe? I realize that the obstacles in the way of my receiving a college education are very great -- to others they may seem insurmountable; but, dear sir, a true soldier does not acknowledge defeat before the battle (Helen Keller, 1900).

Helen Keller's letter not only demonstrated the need for special modifications to college procedures, but it clearly indicated the need for highly specialized support services.

Many colleges, on an individual basis, have attempted to accommodate handicapped students. However, in general they have been limited in meeting the needs of diverse student populations. Alvin Toffler notes in his best seller, Future Shock:

> "One basic complaint of the student is that he is not treated as an individual, that he is served up an undifferentiated gruel, rather than a personalized product...
>
> The difference is that while industry is highly responsive to consumer demand, education typically has been indifferent to student wants... Thus, the student-consumer is forced to fight to make the education industry responsive to his demand for diversity."

Rusalem (1962) described an early study by Gitnick which further substantiated the lack of response to the needs of handicapped students. After surveying 320 institutions of higher learning in 1944, Gitnick found that they were highly selective in the type and degree of disability acceptable for admission to the colleges. Few of the institutions surveyed provided adequate facilities or services. This led Gitnick to the obvious conclusion that severely disabled students could not be accommodated in most colleges and universities.

In recent years, we have made substantial progress in post-secondary education for the handicapped; but, it has been in slow and hard fought stages. Numerous studies (Condon, 1951; Condon and Learner, 1955; Fife, 1960; Kottke, 1956) have shown the evolution of increasing concern for and response to the educational needs of students with disabilities in higher education.

In 1967, Julietta K. Arthur identified numerous institutions of higher education recognized for their development of outstanding programs for the handicapped. To date, several practical and useful directories and resource guides identifying and describing colleges and universities providing special programs/services for handicapped students have been published. Such directories provide valuable assistance to handicapped citizens seeking post-secondary education by describing institutions which are best able to meet their special needs.

THE CURRENT PICTURE

Handicapped individuals have traditionally been excluded from the labor force. Viscardi (1976) reported that "...only 4 million of the 11 million handicapped adults capable of competitive employment are actually working." He cited inadequate education in the schools and post-school services as major reasons for this situation. Additional studies revealing unemployment rates and earnings of handicapped employees reported by Flanagan (1978) indicate that

> "The national employment rates for non-handicapped men and women are 95% and 54% versus 60% and 29% for handicapped men and women. Furthermore, 70% of the non-handicapped versus 40% of the handicapped completed high school and/or additional studies."

This lack of training and employment for the handicapped was also documented by Halloran (1978) who reported that only 1.7% of the total vocational education enrollments during fiscal year 1975 were identified as handicapped. Only 4% of the persons enrolled in CETA Title I programs as of September, 1976, were handicapped and less than 3% of the public service jobs provided under CETA Titles II and VI were held by handicapped workers. Razeghi and Davis (1979) revealed that "85% of people with disabilities have incomes less than $7,000 and 52% of these make less than $2,000 per year."

Most recently the Office for Handicapped Individuals (1979) reported the following bleak predictions for employment of the handicapped for the next four years.

> ...only 525,000 (21%) will be fully employed or enrolled in college.
> ...1,000,000 (40%) will be underemployed and at the poverty level.
> ...200,000 (8%) will be in their home community and idle much of the time.

...650,000 (26%) will be unemployed and on welfare.
...75,000 (3%) will be totally dependent and institutionalized

In response to both the economic considerations and the mobilization of a handicapped consumers legislative movement, the federal government has mandated significant changes to the current practices in vocational education and employment for the handicapped. Of particular note are The Education for All Handicapped Children Act of 1975, the Rehabilitation Act of 1973 with its Section 503 and 504 Regulations of 1977; the Vocational Education Act of 1963 and its Education Amendments of 1976. These federal laws provide the impetus for more responsive, relevant, and affirmative educational and employment programs for the nation's "handicapped" human resources.

The federal mandates reflect a major change in the nation's social, educational, and economic priorities by focusing on the preparation of all students for employment and self-sufficiency. The federal legislation now recognizes that handicapped individuals have not been prepared to fully function in the employment roles to which they aspired, or later found themselves. "Thus, if and when they do enter the mainstream of society, it is often in a 'one-down' position (Flanagan and Schoepke, 1978)."

Clearly, there existed a gap between understanding the needs of handicapped students and the provision of appropriate educational training programs for them. Thus, there is a new challenge to 1) recognize the abilities and employment potential of the handicapped population, 2) identify the educational needs of this population, and 3) design and implement appropriate programs and services to meet those needs.

WHO IS RESPONSIBLE?

A great number of federal and state agencies are designed to meet many human needs and work cooperatively to serve the handicapped population. However, the community college may be most capable in providing for the diverse learning needs of heterogenous society. Brubacher and Rudy (1966) emphasized that "such an institution (the community college) brought higher education within reach of many students who would otherwise have found prohibitive the expense of board and room and travel away from home."

The expansion of programs and services in community colleges has attracted increasing numbers of students. Fasteau and Kearney (1972) identified the increase of enrollment of handicapped students in California Community Colleges.

> "...the rapid growth of the student population also has included a greater proportion of disabled students enrolling in the community colleges. Consequently, the once overlooked and often neglected population of handicapped persons is now beginning to challenge the community colleges' 'Open Door Policy' and commitment to serve the total community."

The Community College offers counseling, testing, career development services, basic adult education, remedial programs, vocational and technical programs, academic courses, and popular interest courses for personal improvement. The "Open Door Policy" and the fact that the community college is generally within commuting distance of most citizens makes it a natural and convenient vehicle through which the handicapped may obtain a high quality vocational-technical education. Access to this education, however, is frequently inhibited by 1) a lack of understanding of their needs, 2) negative attitudes and preconceived

expectations held by teachers, and 3) the propogation of stereotypical labels.

Phelps and Albright (1977) stated that educators have traditionally used labels based on a medical model. Terms such as "handicapped," "disabled," "deficient," "disadvantaged," or "limited" work to the detriment of the individual. Labeling leads to over-generalizing and assuming that the cause of a learning problem (or teaching problem) resides with the student. Such an assumption, thus, relieves the school and teacher of responsibility for those with handicapping conditions. Atypical individuals have come to be characterized as having implicit deficits and liabilities. As a result, negative attitudes toward the disabled student are rationalized. The educator comes to believe that these students (by definition) cannot achieve.

Phelps suggested an alternative definition for these students which clearly shifts educational responsibility to the educator. The handicapped student is

> "...an individual with special needs (and) who is having difficulty succeeding in a regular or special career-oriented educational program due to the effects of a disability, disadvantage, and/or dysfunctional school placement, and who requires individually prescribed, unique, and more powerful teaching techniques, supplemental or supportive services which vary in type and extent depending on the individual, and additional resources from society for his/her education and for his/her acceptance by society."

This definition, as applied to occupational education, places responsibility for teaching the handicapped with the vocational educator. However, the vocational educator cannot be expected to be both a subject matter expert and a special educator. He cannot be expected to

fully understand the functional limitations of every handicapping condition, nor can he realistically provide individual instruction for every handicapped student in his classes. Therefore, the responsibility for vocational/technical/occupational education of students with disabilities must be shared with those who are specifically trained to: 1) assist with the identification of functional limitations imposed upon a handicapped student and their true abilities, 2) assist with the development of individualized prescriptive educational plans, 3) suggest more appropriate instructional techniques which are most appropriate for the disabled student, and 4) provide those essential professional and paraprofessional support services required for educational achievement.

Special educators and other appropriate professionals and paraprofessionals must work in concert with the vocational specialist. This is necessary to meet the diverse needs of handicapped students and to assure compliance with legal mandates designed to successfully integrate them into the vocational education progams offered by the college.

The State University of New York (1978) suggested that the roles of the special educator and the vocational educator should be clearly identified. The special educator, or coordinator of services for the handicapped should: 1) determine, with the student, what support services, special aids and/or modifications are required, 2) initiate the provisions as required, 3) be responsible for tracking and/or supervising the required services, 4) serve as an advocate in order to educate others to the abilities and needs of handicapped students, and 5) function as a consultant to assure the institution is in compliance with legal mandates.

The vocational educator should 1) seek to develop both an understanding of the functional limitations of various disabling conditions and the abilities of the handicapped individual, 2) avoid judgements and preconceived expectations of disabled students' performance based on stereotypical misconceptions, 3) work with the student to resolve logistical problems, and 4) utilize existing resources to the maximum extent possible to assist or find alternatives for training handicapped students.

SUPPORT SERVICES

Legal foundation for the provision of support services to handicapped students is clearly stated in federal regulations, "Guidelines for Eliminating Discriminations (1978)":

> "Recipients (of federal financial assistance) may not deny handicapped students access to vocational education programs or courses because of architectural or equipment barriers, or because of the need for related aids and services or auxiliary aids. If necessary, recipients must: (1) modify instructional equipment, (2) modify or adapt the manner in which courses are offered, (3) house the program in facilities that are readily accessible to mobility impaired students or alter facilities to make them readily accessible to mobility impaired students, (4) provide auxiliary aids that effectively make lectures and necessary materials available to post-secondary handicapped students, and (5) provide related aids or services that assure secondary students an appropriate education."

The California Administrative Code (1978) exemplifies a statewide community college effort to assure access to vocational education for the handicapped and compliance with federal law in the following:

> "56002 - Support Services and Programs. Support services and programs for students will focus on integrating them into the regular college programs or placement in economic or social areas in the community. Such services or programs shall not be provided if or when they are not facilitating measurable progress. These services may include,

but need not be limited to: assessment of basic skills and potential, prescriptive planning and instruction, support personnel and equipment, specific purpose counseling on group or individual basis, work preparation or training and job placement. In addition to support services and programs to meet the exceptional needs of students, all activities and services available to the regular college community shall be available to students with disabilities commensurate with their specific needs. Before a student is assigned to special classes or programs, the college, in concert with the student, shall determine that support services in regular classes are not adequate to meet the particular student's needs."

"56030 - Supportive Services. Supportive services are those services available to students with physical, communication or learning limitations which are in addition to the regular services provided to all students. Such services enable students to participate in the regular activities, program, and classes offered by the college. They may include, but need not be limited to, specific purpose counseling, specific registration assistance, college orientation, specific assessment for academic, career or vocational planning and placement; special facilities; specific educational material; mobility, housing or transportation assistance; developing and maintaining attendant, reader, and interpreter rosters; on-campus aides; equipment loan and repair; and other services appropriate to the student's particular needs..."

The preceeding citations provide the California Community Colleges with the legal authorization to implement a wide range of supportive services to disabled students. It is unique, in that this state legislation addresses 1) the process of directly involving the student in identifying the services needed, 2) justifying the delivery of such services as long as measurable progress is being made, 3) assuring that the student is not denied the benefit of other services available to all other students, and 4) assuring that the services are provided to integrate rather than segregate disabled students.

In an effort to determine the type and extent of support services for handicapped students in public California Community Colleges, Fasteau (1979) conducted a study during the 1978-1979 school year.

Tables 1, 2, and 3 identify special support services, special equipment, and special courses offered in 74 of the 106 California Community Colleges responding to a survey questionnaire.

INTERAGENCY COOPERATION

Razeghi and Davis (1979) cited an official statement of the U.S. Office of Education made in July, 1978 as follows: "It is the position of the U.S. Office of Education that an appropriate comprehensive vocational education will be available and accessible to every handicapped person." This statement was developed jointly by the Bureau of Education for the Handicapped and the Bureau of Occupational and Aoult Education. Additionally, the Office of Education has entered into an interagency agreement with the Rehabilitation Services Aoministration to work cooperatively to prepare handicapped individuals for employment. A memorandum of understanding between USOE and RSA was maoe in October, 1977. This memorandum encourages cooperation between special education, vocational education, and vocational rehabilitation. It outlines specific areas where cooperative efforts should be accomplished including: 1) consultation while developing state plans, 2) personnel preparation development, and 3) joint operation of special programs.

Such cooperative agreements between federal agencies provides great impetus for state agencies to enter into similar agreements. In California, cooperative agreements have been established among the State Department of Rehabilitation, the California Community Colleges, the Employment Development Department, and the State Department of Education. A particular project worth noting is California's Project FIVE H (Formula for Improving Vocational Education for the Handicapped) as described by Goldsmith (1979).

TABLE 1

Number and Percentage of Special Services for Handicapped Students Currently Offered in Seventy-four Public California Community Colleges during 1978-1979

SPECIAL SERVICE	FREQUENCY	PERCENTAGE (N=74)
Registration Assistance	74	100.0
Counseling	73	98.6
Liaisons with Community Agencies	73	98.6
Tutoring	72	97.3
Liaison with Faculty	72	97.3
Special Parking	72	97.3
Service to Community (Advisory)	65	87.8
Notetakers Service	64	86.5
Recruitment/Outreach Activities	63	85.1
Readers for the Blind	62	83.8
Recording Services	60	81.1
Interpreters for the Deaf	58	78.4
Diagnostic Testing/Assessment	57	77.0
Job Placement Service	57	77.0
Orientation/Mobility Training	56	75.7
Mobility Aides	56	75.7
Typing Services	54	73.0
Peer Counseling	49	66.2
Transportation to/from Campus	36	48.6
Transportation on Campus	35	47.3
Special Scholarships, Loans, etc.	34	45.9
Braille Transcription	30	40.5
Work Evaluation	19	25.7
Other	14	19.0

TABLE 2

Number and Percentage of Special Equipment/ Materials/Supplies for Handicapped Students Currently Offered in Seventy-four Public California Community Colleges During 1978-1979

EQUIPMENT/MATERIALS/SUPPLIES	FREQUENCY	PERCENTAGE (N=74)
Tape Recorders	74	100.0
Electric Typewriters	62	83.8
Wheelchairs	61	82.4
Study Carrels	54	73.0
Braille Machines	50	67.6
Adjustable Tables	48	64.9
Videotape Equipment	46	62.2
Large Print Typewriters	45	60.8
Closed Circuit T.V.	42	56.8
Auto Tutorial Machines	35	47.3
TTY/MCM	30	40.5
Talking Calculator	29	39.2
Speech Compressor	28	37.8
Tactile Maps, Charts, etc.	27	36.5
Automatic Page Turner	21	28.4
Computer Assister Instruction	21	28.4
Opticon	21	28.4
Hearing Amplification Aids	18	24.3
Work Sample Stations	11	14.9
Synthetic Speech Devices	7	9.5
Other	11	14.9

TABLE 3

Number and Percentage of Special Classes/ Instruction for Handicapped Students Currently Offered in Seventy-four Public California Community Colleges during 1978-1979

SPECIAL CLASSES/INSTRUCTION	FREQUENCY	PERCENTAGE (N=74)
Reading Skills	55	74.3
Adaptive/Corrective P.E.	54	73.0
Language Skills	50	67.6
Writing Skills	49	66.2
Study Skills	49	66.2
Personal Awareness	48	64.9
Learning Skills	46	62.2
Personal Adjustment	42	56.8
Computational Skills	42	56.8
Pre-Vocational Skills	38	51.4
Speech/Language Development	34	45.9
Group Counseling	34	45.9
Cooperative Career Education	32	43.2
Assertion Training	27	36.5
Special Vocational Training	20	27.0
Survey of Disabilities	19	25.7
Sex Education	16	21.6
Parallel Academic Classes	15	20.3
Personal Hygiene	14	18.9
Braille Instruction	12	16.2
Opticon Training	5	6.8
Other	14	18.9

Phase II of Project FIVE H for the 1979-80 fiscal year includes conducting 10 regional workshops for vocational educators and special educators representing schools, community colleges, district office personnel, county office of education personnel and other educational agency personnel. This state-wide leadership inservice training project has developed a resource manual covering: 1) legal requirements, 2) bias stereotyping, 3) individualized education planning, 4) architectural modifications, and 5) funding in California. The project serves as a potentially productive model for interagency cooperation.

STATE-WIDE EVALUATION SYSTEM - A MODEL

In July of 1976, the Chancellor of the California Community College System announced the completion of the Community College Occupational Programs Evaluation System (COPES) (1976). COPES was developed over a five-year period involving community college instructors, counselors, administrators, students, advisory committee members, special educators, and representatives from business and industry. It was conceived, tested, and implemented as a two-phase system for evaluation of community college occupational education programs. Phase I involves a college-wide self-evaluation. Phase II involves an on-site visitation team whose task is to validate the self-study and report on the areas of greatest strength and those areas where improvement could be made.

A unique subsystem for COPES was developed especially for programs for the handicapped. In this subsystem a set of forms for self-evaluation included the areas of: 1) goals and measurable program

objectives, 2) processes for instructional programs, 3) processes for support services, and 4) utilization of resources. A set of evaluation guides and criteria are provided. Following the collection of evaluation forms from faculty, administrators, students, and advisory committees, the site-evaluation team verifies/validates the self-evaluation.

The COPES subsystem for the handicapped specifically addresses the provision and evaluation of the following support services:

1. Special Counseling
2. Rehabilitation Department Representatives
3. Special Testing and Evaluation
4. Information on Available Occupations
5. Assistance at Registration
6. Note-Takers
7. Interpreters
8. 'Large Print; Textbooks
9. Braille, Tape, and Recorded Materials
10. Magnifying Amplifying Equipment
11. Mobility/Assistance
12. Special Parking Permits
13. Ramps-Curbing for Wheelchairs
14. Accessibility to All Classrooms
15. Specially Equipped Restrooms
16. Specially Equipped Showers
17. Specially Marked Campus Maps
18. Accessibility to Bookstore Library, Auditorium, Gymasium/Fields, and Cafeteria
19. Tutors
20. Readers (i.e., for Blind)
21. Test-Taking Assistance
22. Club/Group Activities
23. Special Resource Center

The System has proven to be effective in identifying areas for improvement, and substantiation of the value of existing program strengths. It serves as an exemplary model for individual colleges or a statewide evaluation system.

CONCLUSION

This paper briefly touched upon several aspects relating to the vocational education of handicapped students in post-secondary education. It is by no means comprehensive. It is merely an overview of what has occurred and suggestions to improve the quality of education for handicapped adults. The provision of necessary and appropriate support services for this unique population has evolved as a result of federal and state legislation and a commitment to the principle of equal educational opportunity for all citizens.

If the true wealth of a nation lies in its human resources, then it must follow that in order to build a better society we must strive to give every individual the opportunity to develop to his fullest potential. The provision of equal educational opportunity must be extended to include those members of society who are capable of contributing but are prevented from acquiring the necessary skills for gainful employment because they are disabled. It is, indeed, a wiser investment to provide education and training to handicapped people so they may become contributors to society than to furnish welfare support and impose a dependency role on them for a lifetime.

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Learning Capacities in Post-Secondary Educational Programs for Handicapped Learners

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INTRODUCTION

In the history of post-seconday education in the United States, the past decade will be recognized as a turning point in the development of post-secondary services for handicapped students. Previewing the literature concerning this subject in the early 1960's Rusalem (1962) concluded that thousands of handicapped students were being systematically denied post-secondary educational opportunities by reason of inadequate physical and educational facilities. Even as recently as ten years ago, many handicapped students were being discouraged from attending post-secondary training institutions by the obstacles they encountered in entering, enrolling, and studying at such facilities (Lynton, 1973).

Over the years, architects, educators, and builders constructed campuses with little thought for students with limitations. The environments they designed usually were built on the assumptions of universal and normal vision, hearing, mobility, and manipulation in the student body. Valid as these assumptions might have seemed to the bricks and mortar people, they made little sense to most educators. Notwithstanding this, few serious visible problems arose since handicapped students, as a group, had not yet come out of the closet. Neither they nor their advocates had yet exerted significant moral or legal pressure upon educational institutions to plan new facilities more realistically, or to alter existing buildings and grounds to make them more accessible.

Since in those days the disabled student group precipitated few crises, administrators felt little impetus toward change. Either the handicapped post-secondary student adapted to the existing barrier-studded campus environment or departed from the scene. When drop-out occurred, the staff felt little guilt about the outcome. After all, they had graciously "accepted" the atypical individual and it was that individual's responsibility to "fit in." Any inability to do so was a student failure not an institutional one. Once the burden of failure had been placed upon the handicapped individual, it was relatively easy for colleges and training institutes to disclaim responsibility (Malikin and Rusalem, 1972).

The consequence of this approach was a high incidence of needless failures, painful heartaches, and a waste of human potential among disabled students. Although rehabilitation workers and special educators occasionally deplored the situation, progress in this area was almost totally dependent upon the conscience of post-secondary administrators and faculty members. Accordingly, a small number of them introduced needed reforms on their campuses that dramatically foreshadowed things to come. Thus, after World War II, the University of Illinois designed a sophisticated program centering around a special handicapped student center and special on-campus transportation facilities. This pioneering effort served as a model for other institutions.

By and large, however, change came slowly in the 1960's. When the decade of the 1970's dawned, most post-secondary training institutions still retained significant architectural barriers including steps

leading to key offices, classrooms, and labs; a lack of elevators, narrow doors, inaccessible bathrooms and drinking fountains; excessively hilly terrains, limited on-campus transportation, inadequate parking facilities, and unsuitable lighting and acoustics, among others (State University of New York, 1967). As though these physical deterrents were not enough, many of these institutions maintained procedural barriers, including exclusions from certain laboratories, inadequate provisions for helping disabled students to prepare assignments and tests, unreasonably difficult library, registration, and extra-curricular processes; prejudicial admissions policies, inappropriate counseling, rigid curricula and teaching methods; and unrealistic evaluations of student performance. These physical and procedural obstacles were overcome by some handicapped individuals who were endowed with one or more exceptionally favorable attributes or who had powerful on-campus advocates. Most of the others either struggled needlessly and stressfully to sustain themselves on campus or failed to meet institutional, educational, and/or social standards.

RECENT INITIATIVES

During the 1970's, a virtual revolution occurred in post-secondary education opportuniites for handicapped students. Spurred by affirmative action legislation, increased concern in the U.S. Office of Education and State Education Departments, and the growing awareness of educational administrators of the need for reform, a movement developed that has re-shaped programs for handicapped individuals in hundreds of post-secondary educational institutions (U.S. Department of Health, Education, and Welfare, 1977). A comparison of the status of special

education programs for disabled persons in 1970 and 1980 suggests that, indeed, a massive change has occurred. Some of the evidence of this revolution are:

...The number of handicapped students enrolled in post-secondary institutions is greater than ever before in history.

...A large number of campuses have taken important steps to eliminate existing architectural barriers.

...Deterrent educational procedures have been revised and redesigned in hundreds of colleges and vocational and technical institutes.

...Special facilities and projects have been developed for defined exceptionality groups including the Rochester Technical Institute for the Deaf, and the Computer Education Program for Blind Persons at Baruch College of the City University of New York.

...A new educational specialty for service to handicapped students is emerging in post-secondary instruction and student personnel services (Rusalem and Malikin, 1976).

Important as these gains have been, even more significant is the fact that the movement goes on. Post-secondary services for handicapped students are still in flux and year by year additional innovative and effective programming is introduced. Never before have so many handicapped post-secondary students had so broad a spectrum of opportunities. In addition to these developments, is the trend of some institutions not only to actively recruit handicapped individuals but also to admit them in larger numbers, emphasizing their special concerns and facilities for this population. Plans already announced for the 1980's by some post-secondary educational institutions suggest that the development of more sophisticated programs for handicapped students is still in a dynamic growth phase. It is not too optimistic to predict that when 1990 is reached, most of the architectural and procedural barriers that

still remain will have been eliminated or substantially reduced (State University of New York, 1976).

BARRIERS TO SUCCESS

Although the technology for serving handicapped individuals is already at hand, the use of this technology on individual campuses and with individual students will require additional research, demonstration, and creative planning. Among the unresolved problems that continue to confront post-secondary institutions that have moved ahead on eliminating or reducing architectural barriers are:

1. Overcoming faculty apathy or resistance to atypical students who require special educational interventions.
2. Maintaining the costs of special programs and services within current budgetary limitations.
3. Reducing community prejudice directed at handicapped students and graduates.
4. Helping the student body to assume more constructive and therapeutic attitudes and behaviors toward their disabled colleagues.
5. Providing more relevent career education and vocational rehabilitation that will enable handicapped students to select goals for vocations that are realistic and fulfilling.
6. Offering suitable mental health services to both physically handicapped and emotionally troubled students.
7. Promoting student readiness for the post-secondary educational experience through pre-enrollment preparation programs that go beyond the customary note-taking, remediation, and study skills offerings.

Each of these areas of potential future development currently constitutes a barrier to some handicapped students. Architectural and procedural deterrents are being removed on a more systematic basis. However, it is clear that the most formidable barrier is as potent and

invisible as ever, the handicapped person's attitude toward himself. Largely unrecognized and untreated, this barrier accounts for a majority of post-secondary education failures.

This crucial component is closely interwoven with the long-term disability experience. In most instances, a handicap is not just an isolated event but a pervasive, enduring, and powerful influence on almost every aspect of human development and everyday life. Functioning under disability constraints has an impact upon an individual's perception of self and the world, attitudes and behavior, and sense of affiliation with, or alienation from the mainstream of social interactions.

Not the least of these effects is the influence a disability may have upon an individual's learning efficiency. Among the critical aspects of the disability experience that tend to impede learning are:

1. Protracted experience deprivation.
2. Central nervous system conditions associated with the major disability.
3. Inadequate provisions for learning during infancy and preschool periods associated with parental neglect, family dissension and stress, insufficient stimulation in the home, and/or overprotection.
4. Lack of educational opportunities in school and community.
5. Extended stays in hospitals and child care institutions.
6. Lack of sufficient mobility to interact adequately out of the home with peers and community resources, such as libraries, places of work, and recreational centers.
7. Sensory defects that restrict stimulus input.
8. Focus upon health concerns to the exclusion of involvement in external activities.

These and other factors impinge to a varying degree in individual cases upon the learning performance of handicapped persons. In some instances, the total effect may be minimal and the disabled person may function effectively, presenting few problems in an otherwise suitable post-secondary educational environment. More often, however, serious learning limitations result from the disability experience that restrict the benefits derived from the post-secondary program.

These limitations are not always identified by the post-secondary training institution. A preoccupation with the dramatic major disability may obscure the more subtle learning deficits brought by a handicapped individual into the educational setting. Furthermore, in the presence of an uneven academic performance (with higher levels of functioning in some subject areas than in others) student failures can easily be attributed to emotional problems, faltering motivation, lack of student interest, perverse behavior, or inappropriate defense mechanisms. In such instances, the special learning problems of disabled persons may be overlooked entirely or misdiagnosed as emotional instability or maladaptation (Gearhart, 1973).

Currently, architectural and procedural barriers dominate educators thinking about handicapped students but the learning variable generates far more failures in post-secondary education than both combined. In practice, an institution may admit a handicapped student, instruct that student in an appropriate curriculum, and provide a reasonable physical and procedural setting for mastering the content of the curriculum. However, if the handicapped student fails to learn that content, of what value is the rest of the special service program?

Furthermore, even if a post-secondary institution recognizes that a learning problem is present, it is likely to prescribe interventions that are only partially helpful. The Learning Capacities approach (Rusalem and Malikin, 1976) has served handicapped students in 15 community colleges and 25 trade schools and technical institutes. In these instances, the institutional response to a serious student learning problem was in the form of one or more of the following:

1. Remediation

   Although remediation has had some success in overcoming deprivations of the past, it has been less effective in upgrading long-standing learning malfunctions. In brief, remediation is most helpful in strengthening skills and knowledge in students who are relatively intact in their learning capacities. When significant damage has occurred in the learning mechanism, remediation interventions are likely to have limited success since they usually require the individual to learn through conventional and stereotyped methods, although on an individualized and less stressful basis.

2. Counseling

   The assumption in a counseling intervention is that personal and emotional factors are interfering with the operation of an intact learning mechanism. However, among handicapped students with serious learning deficits, no amount of counseling is likely to change the impaired learning functions. No matter how hard the student tries and how free that student may be of emotional distractions, the basic learning

processes remain substantially unresponsive to customary interventions.

3. Special Class Sections

Such sections usually have the advantage of enrolling smaller student groups that may be taught by more sensitive and skillful instructional personnel. Yet, by and large, given these advantages, special sections still are taught by conventional methods addressed to groups of students rather than unique individuals.

4. Tutoring

In tutoring, individual students are assisted in critical subject matters by helpers on a one-to-one level. However, despite evident advantages, tutoring ordinarily provides only more of the same conventional instructional procedures that were ineffective in the classroom. Although some students with serious learning problems benefit to some extent from tutoring, a mere repetition of instructional strategies that have already failed can be equally ineffective in individual contacts.

5. Self-Instruction and Other Special Teaching Procedures

Many institutions, in their search for a "magic" solution to learning problems, adopt a promising educational method. These methods tend to vary from year to year. Thus, in their day, programmed instruction, tutorials, student self-help groups, multi-media approaches, projects, increased

study and class time, study labs, and work-study programs have all been used with groups of students who have learning problems. In general, each of these approaches benefits some students some of the time, but generate indifferent results in many others, especially when used as an untargeted panacea.

THE LEARNING CAPACITIES RESEARCH PROJECT

In relation to learning-limited handicapped individuals (and, others, as well) the central fallacy in post-secondary education is the belief that one system will properly reduce or eliminate learning problems in all or most students. This pattern is typified in the field of reading in which fashions come and go and one method succeeds another in dogged pursuit of the methodological "silver bullet." In colleges and other post-secondary institutions a similar trend is observable. In each case, pride is taken in the intervention that has been adopted by that institution to cope with student's learning difficulties. On some campuses, a strong mental health emphasis prevails; on another, remediation is preferred; and on still others, tutoring predominates. The Learning Capacities Research Project has identified one consistent shortcoming in all of these worthy interventions: the belief that they will serve exclusively or in combination with a few other approaches to reduce learning problems of large groups of disabled and other students (Rusalem and Malikin, 1976).

The Learning Capacities Research Project has found that concentration upon a student's learning disabilities and deficits in an effort to correct limitations is not cost-effective. Assigning a student's learning deficits to a particular category may be necessary for budgetary and

management purposes. Unfortunately, this practice focuses upon losses that are largely irreversible and highly individual. Consequently, categories only serve to obscure crucial individual differences. In the absense of serious learning problems, sorting students by their pathology may not be crucial because many students with relatively intact learning abilities learn no matter how we teach them, and in some cases, learn in spite of us.

That is not the case with the handicapped student who has significant learning deficiencies. In these instances, complex damage may be observed in one or more of the five essential components in the learning sequence:

1. Input

   Students may have limitations in their receptors (eyes, ears, skin, taste, and others) which block educational impulses targeted at those modalities.

2. Incoming Communication Network

   Students may have impairments in the nervous tissue which conducts incoming impulses to the brain and spinal cord. Such damage may result from birth defects, drugs, alcohol, illnesses, injuries, and emotional conditions.

3. Processing

   Incoming impulses are processed in the brain and the spinal cord in order to give meaning, consistency, and clarity to the messages one receives while experiencing the world and

oneself. Damage to the processing mechanism usually produces misinterpretations of stimuli and impedes effective learning.

4. Outgoing Communication

After information processing, messages are transmitted from the Central Nervous System to other parts of the body. As indicated in the section above on Incoming Communication Networks, deficits can occur in the neural system and impair subsequent thought or action.

5. Expression

Learning usually is manifested by an internal or external response to the perceived stimulus expressed in altered ideation, speech, visceral sensations, physical action, or awareness. Damage to any of these expressive mechanisms, for example, speech, can reduce learning effectiveness in the educational process.

It is important to note that the degree, type and duration of impairment, if any, occurring in each of these areas differs from person to person. Furthermore, these five aspects of the learning mechanism interact with each other in the course of the learning experience. In view of the almost infinite number of possible combinations and permutations, it is illogical to expect that any one, of two, or three educational interventions can ever meet the vast range of individual learning needs. On the contrary, these observations about learning suggest that since no two learners are alike, post-secondary education programs should be

individualized especially for those who have significant learning deficits. Yet, the prevailing practice is to stereotype instructional programs, offering at most a small number of untargeted instructional alternatives.

Some post-secondary institutions have acknowledged the vast array of learning problems in their student bodies and have taken measures to remediate these deficits. This is a very attractive idea since cure or symptom reduction is the ultimate hope in a therapeutic approach. Although positive results have been achieved with remediation in some instances, many learning deficits do not yield readily to this treatment.

In its joint efforts with post-secondary colleges and vocational institutes, the Learning Capacities Research Project has focused upon another approach to the development of residual learning capacities rather than the remediation of long-standing academic deficits. In this context, it is hypothesized that otherwise qualified students can strengthen their existing learning resources (not deficits) by a systematic alteration of three variables in the learning situation:

1. Creating a milieu in which the individual's learning capacities will be maximized. For example, providing lighting, acoustics, ventilation, space, furniture, interpersonal conditions, size and nature of learning groups, human and object supports, and aids and appliances that will enable an individual to learn more effectively.

2. Using instructional methods that are demonstrably compatible with the individual learning style of the learner.

3. Teaching students with learning problems how to cope with deterrent and possible unalterable educational variables, such as instructors who will not modify their instructional procedures to meet individual needs, administrators who decline to provide needed rest periods and spaced learning opportunities, fellow students who do not give mobility assistance, and counselors who persist in using guidance techniques that are incompatible with individual student's perceptual capabilities.

In this frame of reference (as contrasted to a counseling, remediation, tutoring, special class section, or programmed instruction approach) a match is sought between a handicapped student and a combination of environmental conditions, instructional modes, and student strategies that will result in optimum student performance. In Learning Capacities service to more than 3,000 post-secondary students, no two identical combinations of factors have been evolved for any two individuals. Rather than attempting to reverse deficits by a rigid remedial procedure, the Learning Capacities approach identifies student strengths and prescribes procedures that will enable these strengths to be used most fully and economically in fulfilling institutional and individual objectives.

Questions often raised about this approach include:

1. Can any institution afford the degree of individualization required in this approach? There is so much waste of time, energy, and money in more orthodox approaches that most institutions cannot afford to ignore individualization. The

Learning Capacities method has proven cost effective wherever it has been tried. It is by far the most economical of current interventions.

2. Is this approach appropriate for all students? It is, but from the viewpoint of cost-effectiveness, it is most appropriate for high risk students who cannot benefit sufficiently from existing conventional instructional interventions.

3. Where does one find the personnel to deliver this type of service? Among existing institutional staff members. Open, flexible, and sensitive instructors, counselors, and administrators can be trained to function relatively independently in the Learning Capacities Approach in two to four weeks.

4. What is required in additional capital expenditures and office space? Office space is not a factor since the staff moves out of the office into the area in which the student is learning. Furthermore, since the service is delivered in the natural campus environment (classrooms, libraries, labs, student union, and dormitories) no special equipment or furniture is necessary.

5. If the Learning Capacities Approach works as well as claimed, why has every post-secondary institution not adopted it for handicapped and other students? Each campus has its own constellation of conditions that mitigate against this. In some

cases the administration and faculty are unaware of the approach. In other instances, they are not inclined to give credence to the merits of Learning Capacities even to the point of allowing it to be demonstrated to them on their own campus. Finally, all institutional settings have built-in forces that operate against all change. These forces may be so powerful that new ideas penetrate only after prolonged periods of time.

Before outlining the Learning Capacities process, it may be helpful to indicate how one institution is using it. Rio Salado Community College is part of a non-traditional two-year post-secondary school program in Maricopa County, Arizona. In order to meet the needs of its constituency, Rio Salado has initiated a number of innovations. One of these concerns the establishment of a college without walls in Sun City. With about 45,000 residents, Sun City constitutes an almost self-contained entity, serving individuals who are 55 years of age or older. A significant proportion of these residents retain needs for intellectual stimulation and involvement. Year-round, they attend Rio Salado Community College, which maintains office and classroom facilities in a central Sun City location. Under the leadership of Dean Richard Elton, Learning Capacities Research Project personnel found that a major deterrent to the pursuit of a two-year associate degree program in this population was the high incidence of handicaps and concurrent learning problems associated with the aging process.

Among these problems are learning deficits stemming from:

1. Neurological changes that reduce memory and learning.

2. Past educational deprivation.

3. Prolonged shelter in the home (most evident in the women in the group).

4. Profound doubts about one's ability to function intellectually at the college level.

5. Loss of study skills that had been acquired five or more decades ago.

6. Declining sensory and mobility capabilities.

7. Loss of a career incentive.

Recognizing that older persons are likely to become a major part of the post-secondary school educational consumer population in the 1980's, Dean Elton and the Learning Capacities Research Staff devised the "Never Too Late Program," an individualized educational experience leading to an Associate Degree. This program was built around concern for individual learning style and the use of educational interventions that are individually prescribed in accordance with unique learner attributes.

Preliminary findings suggest that:

1. It is cost-effective to provide individualized service to elderly handicapped post-secondary students.

2. Assisted by individualized support services, these students function quite comfortably in the Community College setting and make satisfactory progress. In fact, they make very superior students and meet all college standards. The modifications that are made are not in content or requirements, but

in the development of individual prescriptions of environmental variables, instructional techniques, and student strategies that heighten the efficiency of current learning abilities.

3. The Never Too Late Program is so successful that it is being expanded at Rio Salado and, possibly will be established in other communities that have large numbers of older handicapped residents.

It is only coincidental that the Rio Salado experience concerns older handicapped persons. The population could be any age group and any set of handicapping conditions including specific learning disabilities. The common factor is that in every community there are people, labeled handicapped or not, whose learning characteristics are so exceptional that they require custom-designed instruction, counseling, and support services. Long before the Rio Salado experience, the Learning Capacities Approach was introduced successfully into trade and vocational schools in New York City, community colleges on the East Coast, and skills training programs in Ohio and Indiana. Currently, work is underway on adapting these procedures for vocationally oriented programs offered by Deseret Industries, an extensive service network for handicapped and deprived persons.

The Learning Capacities Approach can be introduced into virtually any post-secondary program. The requisite components include:

1. A specialized student evaluation lasting two hours or less that emphasizes the identification of student academic potential and the environmental conditions, instructional methods, and

student strategies that will enable a handicapped (or other) enrollee to cope most successfully with campus demands.

2. The development of an academic prescription detailing specific practical steps that should be taken in arranging environmental conditions, instructional techniques, and student strategies to optimize student functioning.

3. Implementation of the Learning Capacities prescription by trained institutional personnel in cooperation with the faculty, administration, student body, and pupil personnel services staff.

4. Periodic evaluation of the handicapped student so that progress may be observed and alterations can be made in the instructional prescription.

5. Gradual withdrawal of the Learning Capacities intervention so that the student and the institution may normalize their relationship at the earliest possible moment.

When post-secondary school programs for handicapped (and other students) install the five steps noted above in accordance with procedures developed by the Learning Capacities Research Project, severe educational problems tend to become increasingly manageable. In the recent past, as admissions became less selective, many post-secondary educators were at a loss to understand and cope with some of their atypical students. While verbally advocating individualized approaches, some of them found it convenient to conduct business as usual and to

attempt to meet the challenge of individualization through group-oriented categorical methods that exacerbate, rather than alleviate, learning problems.

The general findings of the Learning Capacities Research Project suggest:

1. Learning problems are the major impediment to the academic and vocational progress of handicapped students at the post-secondary level.

2. Conventional programming does not eliminate the severe learning problems found in this group.

3. With increasing enrollments of students with special needs expected in the future, the difficult problems of the atypical student will be with us indefinitely unless we take immediate steps to confront these problems in a rational manner.

4. Handicapped students with learning problems have vast potential that is not being developed by conventional group-oriented or remedial techniques.

5. The failures that we may be experiencing with handicapped students often are failures of an inflexible instructional system that continues delivering services that already have failed.

6. Post-secondary institutions will have to face up to their educational responsibilities to atypical students through innovative programming that economically and effectively makes it possible for each student to learn at his/her optimum level.

7. The technology for accomplishing this is readily available either through the Learning Capacities Approach or some other comparable individualized instructional mechanism.

CONCLUSION

Many post-secondary institutions pass through a highly creative phase in their development when they not only use creative technologies, but design and test them as well (Hourihan, undated). All too many institutions have passed through an organizational membrane into "program maturity." This maturity can be characterized by a hardening of the educational arteries that makes change increasingly difficult. Innovative and daring leadership is the single most important factor in making institutional maturity exciting and humanistic. As long as administrators concentrate largely on routine business management matters, we run the risk of stereotyped and irrelevant programming. On the other hand, administrators who combine management sophistication with concern for emerging instructional technology and individualism, constitute the hope of the future for the handicapped students who enroll in our programs.

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EPILOGUE

Post-secondary vocational education for handicapped learners is becoming an increasingly important area of concern for vocational and special educators. Post-secondary vocational education can meet the vocational needs of handicapped people by providing services which will enable them to become employable and active members in society. In addition, the authors have verified the need for post-secondary vocational education for handicapped learners. Several issues were identified and various recommendations were suggested.

In terms of Legislative Issues Affecting Post-Secondary Vocational Education for Handicapped Learners, the following major issues should be further addressed:

- More funding and staff are necessary to provide effective post-secondary vocational education for handicapped learners.
- Effective interagency cooperation and agreements are essential.
- State agencies need to express a greater commitment and should extend beyond existing federal laws to improve post-secondary vocational education for handicapped learners.
- An examination of the major changes that are necessary for facilitating the implementation of effective post-secondary vocational programs should occur.

- New federal initiatives should be pursued to assist states in implementing effective post-secondary vocational education programs for handicapped learners.

- The responsibility for delivering post-secondary vocational education services to handicapped learners needs to be determined.

With respect to State Planning of Post-Secondary Vocational Education for Handicapped Learners, the following major issues and recommendations are suggested:

- State plans need to be developed that: are based on reliable data, are comprehensive, avoid proliferation of programs, allow for options, provide for career education for all handicapped persons during their elementary and secondary education, provide for continuing education, and require preservice and inservice training programs for post-secondary vocational teachers and support personnel who provide services to handicapped learners.

- State plans should only reflect real plans that will be implemented rather than plans that merely indicate compliance.

- State plans must insist on systematic ongoing needs assessment.

- State plans must insist on effective interagency cooperation and agreements.

- State plans should be developed through the use of expert advisory councils.
- State plans must provide for continuous evaluation based upon adequate data.
- More federal funding is needed for effective implementation of post-secondary vocational education programs for handicapped learners.
- Federal agencies should provide technical assistance to state planners.
- Federal regulations need to be more clearly written.
- Institutions which provide special programs should be made available to persons who have the same or similar handicapping conditions.

Needs assessment is critical in Post-Secondary Vocational Education for Handicapped Learners. Several issues and recommendations were suggested:

- Systematic approaches to needs assessment for post-secondary vocational education must be developed.
- A comprehensive model needs to be designed that incorporates all program components.
- Reliable and valid needs assessment instruments and techniques should be developed.

- Continuous evaluation should be established that is linked to state-wide program evaluation.

- Administrative commitment needs to be tied to incentive to encourage post-secondary institutions to work with handicapped learners.

- Effective interagency cooperation and agreements are essential.

Several specific issues and concerns were identified and addressed regarding Articulation in Post-Secondary Vocational Education for Handicapped Learners. Some of the major issues and recommendations include:

- Articulation models should be cooperatively designed at the national, state, and local levels and should identify: existing or potential problems, personnel involved, services provided, the system within which the articulation process is to be implemented, and the delivery model which is to be implemented.

- A referral process from secondary to post-secondary levels should be identified.

- Curriculum needs to be coordinated between the secondary and post-secondary levels.

- Articulated programs must reflect labor market demands.

- An identified career ladder should be built into the articulation process.

With respect to Support Services in Post-Secondary Vocational Education for Handicapped Learners, the following issues and recommendations are suggested:

- The responsibility for providing support services to handicapped learners must be determined.
- Effective interagency cooperation and agreements are essential.
- Continuous evaluation of support services should be established that is linked to state-wide program evaluation.

In terms of Learning Capacities in Post-Secondary Educational Programs for Handicapped Learners, the following major issues should be further addressed:

- Faculty and staff apathy or resistance toward handicapped students' needs to be overcome.
- Funding special programs and services within current budget limitations.
- Overcoming community prejudice toward handicapped learners.
- Improving non-handicapped students' attitudes toward handicapped students.

- Providing alternative programs and support services to handicapped learners.

- Promoting comprehensive student orientation programs for post-secondary education.

- Post-secondary institutions must provide innovative programming that involves individualized instruction.

The identified issues and functional recommendations will hopefully provide information that will assist in developing post-secondary vocational programs for handicapped learners. The issues cannot be considered an exhaustive list. However, the issues and recommendations provide considerations for planning, implementing, and evaluating post-secondary vocational education for handicapped learners.